FINANCIAL MANAGEMENT

INSTRUCTION FOR STUDENTS

This study guide is intended to assist distance-learning students in their independent studies. In addition, it is only for the personal use of the purchaser, see copyright clause. The course has been broken down into eight lessons each of which should be considered as approximately one week of study for a full time student. Solve the reinforcement problems verifying your answer with the suggested solution contained at the back of the distance learning pack. When the lesson is completed, repeat the same procedure for each of the following lessons.
At the end of lessons 2, 4, 6 and 8 there is a comprehensive assignment that you should complete and submit for marking to the distance learning administrator.

SUBMISSION PROCEDURE

1. After you have completed a comprehensive assignment clearly identify each question and number your pages.
2. If you do not understand a portion of the course content or an assignment question indicate this in your answer so that your marker can respond to your problem areas. Be as specific as possible.
3. Arrange the order of your pages by question number and fix them securely to the data sheet provided. Adequate postage must be affixed to the envelope.
4. While waiting for your assignment to be marked and returned to you, continue to work through the next two lessons and the corresponding reinforcement problems and comprehensive assignment.

On the completion of the last comprehensive assignment a two-week period of revision should be carried out of the whole course using the material in the revision section of the study pack. At the completion of this period the final Mock Examination paper should be completed under examination conditions. This should be sent to the distance-learning administrator to arrive in Nairobi at least five weeks before the date of your sitting the KASNEB Examinations. This paper will be marked and posted back to you within two weeks of receipt by the Distance Learning Administrator

CONTENTS

BUSINESS FINANCE COURSE DESRIPTION

Business Finance is an introductory course in finance a pre-requisite for financial Management of section six finance managers makes four crucial decisions of the firm

- Financing decision concened with the sources of funds, cost of capital, mix of various capital components and evaluation of capital markets for long and short term financing
- Investment in long-term investment decisions involving derivation of future cashflows and appraising projects and how securities of the firm may be valued
- Working capital management which involves management of current assets to meet short termliquidity needs of the firm
- Divisions of earnings between payment of dividends and retention for the purpose of financing future projects.

Business Finance course explore these four main decisions under conditions of certainty this is in addition to evaluating the performance of the firm using ratio analysis .Basic tools of finance are also introduced at this level.
The overall place of the course in C.P.A Syllabus is a bridge between accounting and Finance functions within the organization before critical evaluation of finance under condition of uncertainty in financial management.
It also gives an overview of how various stakeholders of the firm have divergent objectives which impact on the goal of shareholders wealth maxmisation this is covered Under agency theory.

BUSINESS FINANCE INDEX

LESSON ONE

NATURE OF BUSINESS FINANCE

INSTRUCTIONS

- Read Chapter 1 of Financial Management textbook by I.M. Pandey.
- Complete answers to **reinforcement** questions at the end of the lesson.
- Check model answers given in lesson 10 of the study pack.
- Reinforcing Comments

CONTENTS

- Relationship between business finance and financial management.
- Scope of Finance functions.
- Goals/Objectives of the firm.
- Agency theory.
- Risk-return Trade off.
- Types of business organization

RELATIONSHIP BETWEEN BUSINESS FINANCE AND FINANCIAL MANAGEMENT

DEFINITION:

Business finance is the process by which a financial manager/accountant provides finance for business use as and when it is needed. This provision has to be undertaken on the basis of the needs of a company. On the other hand, Financial Management is a branch of economies concerned with the generation and allocation of scarce resources to the most efficient user within the economy (or the firm). The allocation of these resources is done through a market pricing system. A firm requires resources in form of funds raised from investors. The funds must be allocated within the organisation to projects that will yield the highest return.

1. Needs Consequent on the Operations of a Company (Basic Needs)

These have to be financed in so far as they arise out of the company"s operations e.g. salaries.

2. Shortages of Cash Brought About By Unforeseeable Circumstances E.G Non Payment By Debtors

These needs have to be financed by short term finances e.g. overdrafts, but this may be against financial prudence rather such needs should be financed by revolving finances in the circular flow. However, the financial manager must manage his finances using such tools as:

- Cash budget – statement of expected receipts and payments over a projected period of time – a forecast.
- Funds flow statement – (Actual).

Variance between actual funds flow with cash budget. The variance must be managed to keep the company liquid. On the other hand a financial manager has to meet the company"s strategic/long term needs (long term investment) are useful to the company because:

1. It influences the company size (assets)
2. It influences its growth (plough back)
3. Finances incidental needs.
4. It influences the company"s long-term survival – this is through continuous investment.

These investments will call for long term financing in form of owners finance (Ordinary Share Capital and Revenue reserves). This is a base on which other finances are raised. The company will also use external financing e.g. debts, loans, debentures, mortgages, lease finance etc. These finances have to be used in acceptable/reasonable financial mix. This implies that the company"s gearing level is kept low i.e. the relationship between owners and creditors finance. This should be below 67% otherwise the company may be forced into receivership and subsequently liquidation. Even then, when using creditors finances a company must consider:

1. That cost of finance is less than the Return which implies the rate should not be less than the bank interest + inflation + risk.
2. Economic conditions prevailing – use debt under boom conditions.
3. Present gearing – if high this will lead to:
4. Low credit rating

5. Lowering of the company"s share prices especially to less than Par value – this leads to mass sale of shares – creditors rush to draw their finances and therefore receivership.

6. Long term ventures have to call for independent feasibility studies before funds are committed i.e.
7. Assessment of the return – at least should be greater than minimum return + risk + inflation.
8. Economic life – if uncertain, the return ought to be higher. Such life must allow the company to pay off the loan.

The financial manager must be guided by principles of financial prudence i.e.

1. He has to consult experts.
2. He has to involve investment committee
3. He has to ascertain whether everyone involved in the implementation of the venture has not been left out either during the planning phase or implementation phase.

SCOPE OF FINANCE FUNCTIONS

The functions of Financial Manager can broadly be divided into two: The Routine functions and the
Managerial Functions.

Managerial Finance Functions

Require skilful planning, control and execution of financial activities. There are four important managerial finance functions. These are:

a) Investment of Long-term asset-mix decisions

These decisions (also referred to as capital budgeting decisions) relates to the allocation of funds among investment projects. They refer to the firm"s decision to commit current funds to the purchase of fixed assets in expectation of future cash inflows from these projects. Investment proposals are evaluated in terms of both risk and expected return.

Investment decisions also relates to recommitting funds when an old asset becomes less productive. This is referred to as replacement decision.

b) Financing decisions

Financing decision refers to the decision on the sources of funds to finance investment projects. The finance manager must decide the proportion of equity and debt. The mix of debt and equity affects the firm"s cost of financing as well as the financial risk. This will further be discussed under the risk return trade-off.

c) Division of earnings decision

The finance manager must decide whether the firm should distribute all profits to the shareholders, retain them, or distribute a portion and retain a portion. The earnings must also be distributed to other providers of funds such as preference shareholder, and debt providers of funds such as preference shareholders and debt providers. The firm"s dividend policy may influence the determination of the value of the firm and therefore the finance manager must decide the optimum dividend – payout ratio so as to maximise the value of the firm.

d) Liquidity decision

The firm"s liquidity refers to its ability to meet its current obligations as and when they fall due. It can also be referred to as current assets management. Investment in current assets affects the firm"s liquidity, profitability and risk. The more current assets a firm has, the more liquid it is. This implies that the firm has a lower risk of becoming insolvent but since current assets are non-earning assets the profitability of the firm will be low. The converse will hold true.
The finance manager should develop sound techniques of managing current assets to ensure that neither insufficient nor unnecessary funds are invested in current assets.

Routine functions

For the effective execution of the managerial finance functions, routine functions have to be performed. These decisions concern procedures and systems and involve a lot of paper work and time. In most cases these decisions are delegated to junior staff in the organization. Some of the important routine functions are:

a) Supervision of cash receipts and payments
b) Safeguarding of cash balance
c) Custody and safeguarding of important documents
d) Record keeping and reporting

The finance manager will be involved with the managerial functions while the routine functions will be carried out by junior staff in the firm. He must however, supervise the activities of these junior staff.

THE OBJECTIVES/GOALS OF A BUSINESS

1. Profit maximization – This is a traditional and a cardinal objective of a business. This is so for the following reasons:

- To earn acceptable returns to its owners. *(i.e. Must not be less than bank rates + inflation + risk)*
- So as to survive (through plough backs)
- To meet its day to day obligations.

2. To maximize the net worth i.e. the difference between total assets and total liabilities. This is important because:

- It influences company"s share prices.
- It facilitates growth (plough backs).
- It boosts the company"s credit rating.
- This is what owners claim from the company.

3. To maximize welfare of employees – Happy employees will contribute to the profitability. This includes:

- Reasonable salaries
- Transport facilities
- Medical facilities for the employee and his family
- Recreation facilities (sporting facilities).

4. Interests of customers – the company has to provide quality goods at fair prices and have honest dealings with customers.

5. Welfare of the society – the company has to maintain sound industrial relations with the society:

- Avoid pollution
- Contribution to social causes e.g. Harambee contributions, building clinics etc.

6. Fair dealing with suppliers. A company must:

-
- Meet its obligations on time
- Avoid dishonor of obligations.

7. Duty to the government: A company should:

- Pay taxes promptly
- Go by government plans
- Operate within legal framework.

OVERLAPS AND CONFLICTS

- Overlaps – when achieving ONE MEANS achieving the other
- Conflicts – when achieving ONE CANNOT allow the achievement of the other.

Overlaps

- Nos. 4 & 5 – Some of the customers will be members of the Society.
- Nos. 1 & 2 – If a company is profitable it will in most cases increase its net worth.
- Nos. 1 & 6 – if a company maximises its profits, then it will be able to honour its obligations
- Nos. 2 & 5 – Net worth & the society.
- Nos. 3 & 5 – Employees may be the society.
- Nos. 1 & 5 – Profits vs. Society

Conflicts

- Nos. 1 & 4 – Profits vs. Costs
- Nos. 1 & 3 – Profits vs. Costs
- Nos. 1 & 7 – Profits vs. Costs
- Nos. 5 & 7 – High taxes will reduce social benefits
- Nos. 3 & 5 – Costs vs. Appropriated profits
- Nos. 4 & 6 – Better credit terms to customers will not enable the company to pay its creditors

The Main objectives of a business entity are explained in detail below
Any business firm would have certain objectives, which it aims at achieving. The major goals of a firm are:

- Profit maximisation
- Shareholders" wealth maximisation
- Social responsibility
- Business Ethics

a) Profit maximization

Traditionally, this was considered to be the major goal of the firm. Profit maximization refers to achieving the highest possible profits during the year. This could be achieved by either increasing sales revenue or by reducing expenses. Note that:

Profit = Revenue – Expenses

The sales revenue can be increased by either increasing the sales volume or the selling price. It should be noted however, that maximizing sales revenue may at the same time result to increasing the firm"s expenses. The pricing mechanism will however, help the firm to determine which goods and services to provide so as to maximize profits of the firm.

The profit maximization goal has been criticized because of the following:

- It ignores time value of money
- It ignores risk and uncertainties
- It is vague
- It ignores other participants in the firm rather than shareholders

b) Shareholders' wealth maximisation

Shareholders" wealth maximisation refers to maximisation of the net present value of every decision made in the firm. Net present value is equal to the difference between the present value of benefits received from a decision and the present value of the cost of the decision. (Note this will be discussed further in Lesson 2).
A financial action with a positive net present value will maximize the wealth of the shareholders, while a decision with a negative net present value will reduce the wealth of the shareholders. Under this goal, a firm will only take those decisions that result in a positive net present value.

Shareholder wealth maximisation helps to solve the problems with profit maximisation. This is because, the goal:

- Considers time value of money by discounting the expected future cash flows to the present.
- It recognizes risk by using a discount rate (which is a measure of risk) to discount the cash flows to the present.

c) Social responsibility

The firm must decide whether to operate strictly in their shareholders" best interests or be responsible to their employers, their customers, and the community in which they operate. The firm may be involved in activities which do not directly benefit the shareholders, but which will

improve the business environment. This has a long term advantage to the firm and therefore in the long term the shareholders wealth may be maximized.

d) Business Ethics

Related to the issue of social responsibility is the question of business ethics. Ethics are defined as the "standards of conduct or moral behaviour". It can be though of as the company"s attitude toward its stakeholders, that is, its employees, customers, suppliers, community in general creditors, and shareholders. High standards of ethical behaviour demand that a firm treat each o these
constituents in a fair and honest manner. A firm"s commitment to business ethics can be measured by the tendency of the firm and its employees to adhere to laws and regulations relating to:

- Product safety and quality
- Fair employment practices
- Fair marketing and selling practices
- The use of confidential information for personal gain
- Illegal political involvement
- Bribery or illegal payments to obtain business.

THE AGENCY THEORY AND PROBLEM

An agency relationship arises where one or more parties called the principal contracts/hires another called an agent to perform on his behalf some services and then delegates decision making authority to that hired party (Agent) In the field of finance shareholders are the owners of the firm. However, they cannot manage the firm because:

- They may be too many to run a single firm.
- They may not have technical skills and expertise to run the firm
- They are geographically dispersed and may not have time.

Shareholders therefore employ managers who will act on their behalf. The managers are therefore agents while shareholders are principal.
Shareholders contribute capital which is given to the directors which they utilize and at the end of each accounting year render an explanation at the annual general meeting of how the financial resources were utilized. This is called stewardship accounting.

- In the light of the above shareholders are the principal while the management are the agents.
- Agency problem arises due to the divergence or divorce of interest between the principal and the agent. The conflict of interest between management and shareholders is called agency problem in finance.
- There are various types of agency relationship in finance exemplified as follows:

    1. Shareholders and Management
    2. Shareholders and Creditors
    3. Shareholders and the Government
    4. Shareholders and Auditors
    5. Headquarter office and the Branch/subsidiary.

1. Shareholders and Management

There is near separation of ownership and management of the firm. Owners employ professionals (managers) who have technical skills. Managers might take actions, which are not in the best interest of shareholders. This is usually so when managers are not owners of the firm i.e. they don"t have any shareholding. The actions of the managers will be in conflict with the interest of the owners. The actions of the managers are in conflict with the interest of shareholders will be caused by:

i) Incentive Problem

Managers may have fixed salary and they may have no incentive to work hard and maximize shareholders wealth. This is because irrespective of the profits they make, their reward is fixed. They will therefore maximize leisure and work less which is against the interest of the shareholders.

ii) Consumption of "Perquisites"

Prerequisites refer to the high salaries and generous fringe benefits which the directors might award themselves. This will constitute directors remuneration which will reduce the dividends paid to the ordinary shareholders. Therefore the consumption of perquisites is against the interest of shareholders since it reduces their wealth.

iii) Different Risk-profile

Shareholders will usually prefer high-risk-high return investments since they are diversified i.e they have many investments and the collapse of one firm may have insignificant effects on their overall wealth.
Managers on the other hand, will prefer low risk-low return investment since they have a personal fear of losing their jobs if the projects collapse. (Human capital is not diversifiable). This difference in risk profile is a source of conflict of interest since shareholders will forego some profits when low-return projects are undertaken.

iv) Different Evaluation Horizons

Managers might undertake projects which are profitable in short-run. Shareholders on the other hand evaluate investments in long-run horizon which is consistent with the going concern aspect of the firm. The conflict will therefore occur where management pursue short-term profitability while shareholders prefer long term profitability.

v) Management Buy Out (MBO)

The board of directors may attempt to acquire the business of the principal. This is equivalent to the agent buying the firm which belongs to the shareholders. This is inconsistent with the agency relationship and contract between the shareholders and the managers.

vi) Pursuing power and self esteem goals

This is called "empire building" to enlarge the firm through mergers and acquisitions hence increase in the rewards of managers.

vii) Creative Accounting

This involves the use of accounting policies to report high profits e.g stock valuation methods, depreciation methods recognizing profits immediately in long term construction contracts etc.

Solutions to Shareholders and Management Conflict of Interest Conflicts between shareholders and management may be resolved as follows:

1. Pegging/attaching managerial compensation to performance

This will involve restructuring the remuneration scheme of the firm in order to enhance the alignments/harmonization of the interest of the shareholders with those of the management e.g. managers may be given commissions, bonus etc. for superior performance of the firm.

2. Threat of firing

This is where there is a possibility of firing the entire management team by the shareholders due to poor performance. Management of companies have been fired by the shareholders who have the right to hire and fire the top executive officers e.g the entire management team of Unga Group, IBM, G.M. have been fired by shareholders.

3. The Threat of Hostile Takeover

If the shares of the firm are undervalued due to poor performance and mismanagement. Shareholders can threatened to sell their shares to competitors. In this case the management team is fired and those who stay on can loose their control and influence in the new firm. This threat is adequate to give incentive to management to avoid conflict of interest.

4. Direct Intervention by the Shareholders

Shareholders may intervene as follows:

- Insist on a more independent board of directors.
- By sponsoring a proposal to be voted at the AGM
- Making recommendations to the management on how the firm should be run.

5. Managers should have voluntary code of practice, which would guide them in the performance of their duties.

6. Executive Share Options Plans

In a share option scheme, selected employees can be given a number of share options, each of which gives the holder the right after a certain date to subscribe for shares in the company at a fixed price.
The value of an option will increase if the company is successful and its share price goes up. The theory is that this will encourage managers to pursue high NPV strategies and investments, since they as shareholders will benefit personally from the increase in the share price that results from such investments.
However, although share option schemes can contribute to the achievement of goal congruence, there are a number of reasons why the benefits may not be as great as might be expected, as follows:

Managers are protected from the downside risk that is faced by shareholders. If the share price falls, they do not have to take up the shares and will still receive their standard remuneration, while shareholders will lose money.
Many other factors as well as the quality of the company"s performance influence share price movements. If the market is rising strongly, managers will still benefit from share options, even though the company may have been very successful. If the share price falls, there is a downward stock market adjustment and the managers will not be rewarded for their efforts in the way that was planned.

The scheme may encourage management to adopt „creative accounting" methods that will distort the reported performance of the company in the service of the managers" own ends.

Note

The choice of an appropriate remuneration policy by a company will depend, among other things, on:

- Cost: the extent to which the package provides value for money
- Motivation: the extent to which the package motivates employees both to stay with the company and to work to their full potential.
- Fiscal effects: government tax incentives may promote different types of pay. At times of wage control and high taxation this can act as an incentive to make the „perks" a more significant part of the package.
- Goal congruence: the extent to which the package encourages employees to work in such a way as to achieve the objectives of the firm – perhaps to maximize rather than to satisfy.

7. Incurring Agency Costs

Agency costs are incurred by the shareholders in order to monitor the activities of their agent. The agency costs are broadly classified into 4.

a) **The contracting cost.** These are costs incurred in devising the contract between the managers and shareholders.
The contract is drawn to ensure management act in the best interest of shareholders and the shareholders on the other hand undertake to compensate the management for their effort.

Examples of the costs are:

- Negotiation fees
- The legal costs of drawing the contracts fees.
- The costs of setting the performance standard,

b) **Monitoring Costs** This is incurred to prevent undesirable managerial actions. They are meant to ensure that both parties live to the spirit of agency contract. They ensure that management utilize the financial resources of the shareholders without undue transfer to themselves.

Examples are:

- External audit fees
- Legal compliance expenses e.g. Preparation of

- Financial statement according to international accounting standards, company law, capital market authority requirement, stock exchange regulations etc.
- Financial reporting and disclosure expenses
- Investigation fees especially where the investigation is instituted by the shareholders.
- Cost of instituting a tight internal control system (ICS).

c) **Opportunity Cost/Residual Loss** This is the cost due to the failure of both parties to act optimally e.g.

- Lost opportunities due to inability to make fast decision due to tight internal control system
- Failure to undertake high risk high return projects by the manager leads to lost profits when they undertake low risk, low return projects.

d) **Restructuring Costs** – e.g. new I.C.S., business process reengineering etc.

2. SHAREHOLDERS AND CREDITORS/bond/debenture holders

Bondholders are providers or lenders of long term debt capital. They will usually give debt capital to the firm on the strength of the following factors:

- The existing asset structure of the firm
- The expected asset structure of the firm
- The existing capital structure or gearing level of the firm
- The expected capital structure of gearing after borrowing the new debt.

Note

- In raising capital, the borrowing firm will always issue the financial securities in form of debentures, ordinary shares, preference shares, bond etc.
- In case of shareholders and bondholders the agent is the shareholder who should ensure that the debt capital borrowed is effectively utilized without reduction in the wealth of the bondholders. The bondholders are the principal whose wealth is influenced by the value of the bond and the number of bonds held.
- Wealth of bondholders = Market value of bonds x No. of bonds /debentures held.
- An agency problem or conflict of interest between the bondholders (principal) and the shareholders (agents) will arise when shareholders take action which will reduce the market value of the bond and by extension, the wealth of the bondholders. These actions include:

a) Disposal of assets used as collateral for the debt in this.

In this case the bondholder is exposed to more risk because he may not recover the loan extended in case of liquidation of the firm.

b) Assets/investment substitution

In this case, the shareholders and bond holders will agree on a specific low risk project. However, this project may be substituted with a high risk project whose cash flows have high

standard deviation. This exposes the bondholders because should the project collapse, they may not recover all the amount of money advanced.

c) Payment of High Dividends

Dividends may be paid from current net profit and the existing retained earnings. Retained earnings are an internal source of finance. The payment of high dividends will lead to low level of capital and investment thus reduction in the market value of the shares and the bonds.
A firm may also borrow debt capital to finance the payment of dividends from which no returns are expected. This will reduce the value of the firm and bond.

d) Under investment

This is where the firm fails to undertake a particular project or fails to invest money/capital in the entire project if there is expectation that most of the returns from the project will benefit the bondholders. This will lead to reduction in the value of the firm and subsequently the value of the bonds.

e) Borrowing more debt capital

A firm may borrow more debt using the same asset as a collateral for the new debt. The value of the old bond or debt will be reduced if the new debt takes a priority on the collateral in case the firm is liquidated. This exposes the first bondholders/lenders to more risk.

Solutions to agency problem

The bondholders might take the following actions to protect themselves from the actions of the shareholders which might dilute the value of the bond. These actions include:

1. Restrictive Bond/Debt Covenant

In this case the debenture holders will impose strict terms and conditions on the borrower. These restrictions may involve:

a) No disposal of assets without the permission of the lender.
b) No payment of dividends from retained earnings
c) Maintenance of a given level of liquidity indicated by the amount of current assets in relation to current liabilities.
d) Restrictions on mergers and organisations
e) No borrowing of additional debt, before the current debt is fully serviced/paid.
f) The bondholders may recommend the type of project to be undertaken in relation to the riskness of the project.

2. Callability Provisions

These provisions will provide that the borrower will have to pay the debt before the expiry of the maturity period if there is breach of terms and conditions of the bond covenant.

3. Transfer of Asset

- The bondholder or lender may demand the transfer of asset to him on giving debt or loan to the company. However the borrowing company will retain the possession of the asset and the right of utilization.

- On completion of the repayment of the loan, the asset used as a collateral will be transferred back to the borrower.

4. Representation

The lender or bondholder may demand to have a representative in the board of directors of the borrower who will oversee the utilization of the debt capital borrowed and safeguard the interests of the lender or bondholder.

5. Refuse to lend

If the borrowing company has been involved in un- ethical practices associated with the debt capital borrowed, the lender may withhold the debt capital hence the borrowing firm may not meet its investments needs without adequate capital.
The alternative to this is to charge high interest on the borrower as a deterrent mechanism.

6. Convertibility: On breach of bond covenants, the lender may have the right to convert the bonds into ordinary shares.

3. Agency Relationship Between Shareholders And The Government

Shareholders and by extension, the company they own operate within the environment using the charter or licence granted by the government. The government will expect the company and by extension its shareholders to operate the business in a manner which is beneficial to the entire economy and the society.

The **government** in this agency relationship is the **principal** while the **company** is the **agent.** It becomes an agent when it has to collect tax on behalf of the government especially withholding tax and PAYE.

The company also carries on business on behalf of the government because the government does not have adequate capital resources. It provides a conducive investment environment for the company and share in the profits of the company in form of taxes.

The company and its shareholders as agents may take some actions that might prejudice the position or interest of the government as the principal. These actions include:

- Tax evasion: This involves the failure to give the accurate picture of the earnings or profits of the firm to minimize tax liability.
- Involvement in illegal business activities by the firm.
- Lukewarm response to social responsibility calls by the government.
- Lack of adequate interest in the safety of the employees and the products and services of the company including lack of environmental awareness concerns by the firm.
- Avoiding certain types and areas of investment coveted by the government.

Solutions to the agency problem

The government can take the following actions to protect itself and its interests.

1. Incur monitoring costs

E.g. the government incurs costs associated with:

- Statutory audit

- Investigations of companies under Company Act
- Back duty investigation costs to recover tax evaded in the past
- VAT refund audits

2. Lobbying for directorship (representation)

The government can lobby for directorship in companies which are deemed to be of strategic nature and importance to the entire economy or society e.g directorship in KPLC, Kenya Airways, KCB etc.

3. Offering investment incentives

To encourage investment in given areas and locations, the government offers investment incentives in form of capital allowances as laid down in the Second schedule of Cap 470.

4. Legislations

The government has provided legal framework to govern the operations of the company and provide protection to certain people in the society e.g. regulation associated with disclosure of information, minimum wages and salaries, environment protection etc.

5. The government can incalculate the sense and spirit of social responsibility on the activities of the firm, which will eventually benefit the firm in future.

4. Agency Relationship between Shareholders and Auditors

Shareholders appoint auditors as per the provisions of Section 159(1)-(6) of the Companies Act. The auditors are supposed to monitor the performance of the management on behalf of the shareholders. They act as watchdogs to ensure that the financial statements prepared by the management reflect the true and fair view of the financial performance and position of the firm.

Since auditors act on behalf of shareholders they become agents while shareholders are the principal. The auditors may prejudice the interest of the shareholders thus causing agency problems in the following ways:

a) Colluding with the management in performance of their duties whereby their independence is compromised.
b) Demanding a very high audit fee (which reduces the profits of the firm) although there is insignificant audit work due to the strong internal control system existing in the firm.
c) Issuing unqualified reports which might be misleading the shareholders and the public and which may lead to investment losses if investors rely on such misleading report to make investment and commercial decisions.
d) Failure to apply professional care and due diligence in performance of their audit work.

Solutions to the conflict

1. Firing: The auditors may be removed from office by the shareholders at the AGM.
2. Legal action: Shareholders can institute legal proceedings against the auditors who issue misleading reports leading to investment losses.

3. Disciplinary Action – ICPAK.

Professional bodies have disciplinary procedures and measures against their members who are involved in un-ethical practices. Such disciplinary actions may involve:

- Suspension of the auditor
- Withdrawal of practicing certificate
- Fines and penalties
- Reprimand

4. Use of audit committees and audit reviews.

5. HEAD OFFICE AND SUBSIDIARY/BRANCH

MNC has diverse operations set up in different geographical locations.
The HQ acts as the principal and the subsidiary as an agent thus creating an agency relationship.
The subsidiary management may pursue its own goals at the expense of overall corporate goals.
This will lead to sub-optimisation and conflict of interest with the headquarter.
This conflict can be resolved in the following ways:

a) Frequent transfer of managers
b) Adopt global strategic planning to ensure commonality of vision
c) Having a voluntary code of ethical practices to guide the branch managers

An elaborate performance reporting system providing a 2-way feedback mechanism.
Performance contracts with managers with commensurate compensation package for the same.

THE RISK-RETURN TRADE-OFF

Most financial decisions involve alternative courses of action. The alternatives have different returns and risk. For example, should we buy a replacement machine now or should we wait until next year, should we set the debt-to-assets ratio at 20%, 40% or any other ratio?

The higher the risk on any decision, the higher the required return to compensate for this risk.
The relationship between Return and Risk can be expressed as follows:

Required Rate of Return = Risk-free rate + Risk premium.

Risk free rate is compensation for time and risk premium is compensation for risk of financial actions. It can be seen that the relationship is direct.
The finance manager should avoid decisions with unnecessary risk. In making financing decisions for example, the finance manager must decide whether to finance with equity alone or to use debt as well. The expected return when debt is used is high since the cost of debt is low. However, since payment of interest on debt is compulsory, the risk involved is high. On the other hand the cost of equity is high and therefore the return is low. The risk is also low since payment of ordinary dividend is not compulsory. The firm"s liquidity decisions will also affect the risk and the return of the firm.

TYPES OF BUSINESS ORGANISATIONS

1. Sole proprietorships
2. Partnerships
3. Joint stock companies or Public/Private limited companies.

SOLE PROPRIETORSHIP

Characteristics

1. Accounts do not have to be audited
2. It caters for personal attention of customers
3. Limited to such finances as:
    a. Personal saving
    b. Loans from relatives & friends
    c. Short-term loans from banks.
    d. Trade credit from suppliers.
4. Less legal formalities to form.
5. Highly flexible (and adaptable)
6. Highly flexible decision-making process.

Other Advantages

1. Sole trade usually skilled in the business (good for competition)
2. Profits motivates owners
3. High supervision of employees
4. Low bureaucracy (less time wasted)

Disadvantages

1. Short economic life therefore does not attract long-term finance, therefore, limited expansion and growth.
2. Unlimited liability
3. Success depends on ability or judgement of owner

Note

- Most sole traders do not employ professional advice which implies less growth and stagnation.
- Limited sources of finance.
- Limited accounts knowledge.

PARTNERSHIPS

Definitions

"The relationship, which exists between persons carrying on a business in common with a view of profit."

Formation of a partnership
1. Orally
2. Actions of the person concerned
3. Agreement in writing.
4. By a deed i.e. an agreement under seal.

Note

In case the partners want to run their business under a name which does not disclose true surname of all partners, such a firm must be registered under the registration of Business Names Act.

Types of Partners

1. General Partners – Unlimited liability and active in participation in partnership activities.
2. Limited partners – Limited liability and does not participate in the management of partnerships.
3. Sleeping partners – has no active role, nevertheless, such a partner will have contributed to the capital of the partnership business and will thus share in the profits although at a lower proportion in most cases.

A partnership deed constitutes a legal contract among the partners. The articles of partnerships must contain eleven clauses.

1. Nature of business.
2. Profit sharing ratio
3. Capital contribution
4. Rates of interest on both capital and drawings
5. The provision for proper accounts and their audit.
6. Powers of each partner.
7. Grounds of dissolution.
8. Determination of Goodwill
9. Determination of amount payable to outgoing partners.
10. Expulsion procedures.
11. The arbitration clause.

JOINT STOCK COMPANIES

Initiators contribute to the capital base of such companies through the purchase of shares of such companies. These companies are governed by the Companies Act (Cap. 486) of 1948. Such must be registered with the Registrar of Companies after which it is issued with a certificate of incorporation which indicates the Birth of the company.

Advantages

- Limited liability.
- Perpetual existence (or going concern) which allows the company to make strategic plans to raise finance in Capital Markets more easily.
- The company can own assets and incur liabilities on its own accord.
- Title to share is freely transferable which makes these shares more of an investment.
- Exception – Private limited companies whose transfer of shares needs the consent of its members.
- Shares may be used as securities.
- Large sources of finance.

Disadvantages

- Loss of secrecy – poor competition
- Many formalities in forming the company
- Heavy initial capital outlay.
- Difficult to reconstruct the capital

- Bureaucracies especially in decision making processes.
- Inflexibility and thus low adaptability.

Note
They cannot participate in the activities outside the scope of their "objective clause".
Differences between a company and a partnership occur under the following factors:

- Governance
- Legal view (entity)
- Title of shares (transferability)
- Agency
- Liability
- Going concern (dissolution)
- Membership number.

HOLDING COMPANY

One which holds more than a half of the equity share capital of another company or is a member and/or controls a big percentage of the Board of Directors of one or more of other companies which in this case are called subsidiaries for such a holding company.
A holding company may be viewed as a "financial institution" in the sense that it us es shareholders capital to acquire controlling interests in other companies by acquiring up to 51% of the other company"s shares or even more. If such a holding company hold 51% of the shares of another
company, it means that it is the majority shareholder and has substantial influence on the operations of its subsidiary. It will almost be like a sole owner of such a company by virtue of such share holding.

PUBLIC LIMITED COMPANIES

These are joint stock companies which have sold shares to general public and thus have attracted public money in form of share capital. Such companies are usually quoted on the stock exchange. These companies usually raise large sums of money from the public and in order to do so, such companies must:

- Obtain permission from the capital market development authority also known as New Issue Committee.
- The company in need of public money will have to obtain permission from the NSE Council before it can be allowed to have its shares "dealt-in".
- The law requires such a company to have a minimum of seven shareholders and there is no upper limit.

PRIVATE LIMITED COMPANIES

These are NOT allowed to advertise their shares so as to attract public money and as such they sell their shares privately (known as private placing) to interested members of the public. Their shares are not freely transferable as these are not quoted on the stock exchange and they can only be transferred with the consent of the directors. Differences between the two above lies on:

1. Number of shares
2. Transfer of shares
3. Methods of raising funds from the public

4. Number of directors
5. Quotation
6. AGM"s
7. Retirement age of directors.

REINFORCING QUESTIONS

QUESTION ONE

Outline FOUR main objectives, which conflict and at the same time overlap – explain these overlap and conflicts.

QUESTION TWO

Discuss the main problems sole traders" encounter in a bid to raise finance on Kenya"s financial markets.

QUESTION THREE

Within a business finance context, discuss the problems that might exist in the relationships (sometimes referred to as agency relationships) between:

a) Shareholders and managers, and
b) Shareholders and creditors.

QUESTION FOUR

Two neighboring countries have chosen to organize their electricity supply industries in different ways. In country A, electricity supplies are provided by a nationalised industry. On the other hand in country B electricity supplies are provided by a number of private sector companies.

Required

a) Explain how the objectives of the nationalised industry in country A might differ from those of the private sector companies in country B.
b) Briefly discuss whether investment planning and appraisal techniques are likely to differ in he nationalised industry and private sector companies.

Check your answers with those given in Lesson 10 of the Study Pack.

LESSON TWO

SOURCES OF FUNDS

INSTRUCTIONS

- Read Chapter 28 and 31 of Financial Management text book by I.M. Pandey.
- Complete answers to **reinforcement** questions at the end of the lesson.
- Check model answers given in lesson 10 of the study pack.
- Reinforcing Comments

CONTENTS

- Equity capital
- Debt finance
- Bills of exchange
- Lease finance
- Overdraft finance
- Plastic money – Debenture finance
- Venture capital

1. EQUITY FINANCE

For small companies, this is personal savings (contribution of owners to the company). For large companies equity finance is made of ordinary share capital and reserves; (both revenue and capital reserves). Equity finance is divided into the following classes:

a) **Ordinary share capital –** this is raised from the public from the sale of ordinary shares to the shareholders. This finance is available to limited companies. It is a permanent finance as the owner/shareholder cannot recall this money except under liquidation. It is thus a base on which other finances are raised.

Ordinary share capital carries a return that is variable (ordinary dividends). These shares carry voting rights and can influence the company"s decision making process at the AGM.

These shares carry the highest risk in the company (high securities – documentary claim to) because of:

a) Uncertainty of return
b) Cannot ensure refund
c) Have residual claims – claim last on profits, claim last on assets.

However this investment grows through retention.

Rights of ordinary shareholders

1. Right to vote
    a. elect BOD
    b. Sales/purchase of assets
2. Influence decisions:
    a) Right to residual assets claim
    b) Right to amend company"s by-laws
    c) Right to appoint another auditor
    d) Right to approve merger acquisition
    e) Right to approve payment of dividends

Reasons why ordinary share capital is attractive despite being risky

- Shares are used as securities for loans (a compromise of the market price of a share).
- Its value grows.
- They are transferable at capital gain.
- They influence the company"s decisions.
- Carry variable returns – is good under high profit
- Perpetual investment – thus a perpetual return
- Such shares are used as guarantees for credibility.

Advantages of using ordinary share capital in financing.

- They facilitate projects especially long-term projects because they are permanent..
- Its cost is not a legal obligation.

- It lowers gearing level – reduces chances of receivership/liquidation.
- Used with flexibility – without preconditions.
- Such finances boost the company"s credibility and credit rating.
- Owners contribute valuable ideas to the company"s operations (during AGM by professionals).

b) RETAINED EARNINGS

i) Revenue Reserves

These are undistributed earnings. Such reserves are retained for the following reasons:

- To make up for the fall in profits so as to sustain acceptable risks.
- . To sustain growth through plough backs. They are cheap source of finance.
- . They are used to boost the company"s credit rating so they enable further finance to be obtained.
- . It lowers the company"s gearing ratio – reduces chances of receivership/liquidation.

ii) Capital Reserves

1. It is raised by selling shares at a premium. (The difference between the market price (less floatation costs) and par value is credited to the capital reserve).
2. Through revaluation of the company"s assets. This leads to a fictitious entry which is of the nature of a capital reserve.
3. By creation of a sinking fund.

c) PREFERENCE SHARE CAPITAL (Quasi-Equity)

It is also called quasi- equity because it combines features of equity and those of debt. It is preference because it is preferred to ordinary share capital that is:

i) It is paid dividends first – preferred to dividend
ii) It is paid asset proceeds first – preferred to assets.

Unlike ordinary share capital, it has a fixed return. It carries no voting rights. It is an unsecured finance and it increases the company"s gearing ratio.

CLASSIFICATION

i) Redeemable Class

Redeemable preferential shares are bought back by issuing company after minimum redemption period but before expiring of maximum redemption period after which they become creditors. (Can sue the company).

ii) Irredeemable Preference Shares

Are perpetual preference shares as they will not be redeemed in the company"s lifetime unless it is under liquidation, (it is permanent).

Example

Company XYZ Limited has the following capital structure:

	Shs.
10,000 Sh.10 ordinary shares	100,000
10,000 Sh.20 preference shares	200,000
Total share capital	300,000

If the company"s assets proceeds were Sh.400,000 show how this would be shared under:

i) Paripasu
ii) ½

Share participation taking into account the par value.

Solution

i)If the preference shareholders are participative:

	Sh.
Asset proceeds	400,000
Less preference claims	(200,000)
	200,000
Less ordinary shareholders claim	(100,000)
Residue	100,000
Total share capital =	300,000

Participative claim of ordinary shareholders is given by:

$$\frac{200,000}{300,000} \times 100,000 = 66,667$$

ii) Sharing under $\frac{1}{2}$ ratio

	Shs.
Asset proceeds	400,000
Less preference claim	(200,000)
	200,000
Less ordinary share capital	(100,000)
Participative claim	100,000

Preference share capital claim = $\frac{200,000}{300,000} \times \frac{1}{2} = \frac{1}{3}$

$= \frac{1}{3} \times 100,000 =$ Shs.33,000

Ordinary share capital claim = $\frac{1}{3} \times \frac{1}{2} = \frac{1}{6}$

$$= \frac{1}{6} \times 100{,}000 = 16{,}667\%$$

iii) Non-Participative Preference Shares

These do not claim any money over and above their par value, but are usually cumulative and redeemable.

V) Cumulative Preference Shares

These can claim arrears e.g. if a company sold 10% Shs.20 preference shares and did not pay dividends for the next two years, then in the third year shareholders will claim:

10% x 20 x 3yrs = Shs 6 less withholding tax:
= Shs 6 less 5% of Shs 0.30
= Shs 5.70 net

vi) Non-Cumulative Preference Shares

These cannot claim interest in arrears.

vii) Convertible

These can be converted into ordinary shares (which is optional).

Conversion ratio = par value of ordinary share/par value of preference shares e.g if par value of ordinary shares is Sh.10 and that of preference shares is Sh.20, then conversion ratio $= \frac{10}{20} = \frac{1}{2}$ i.e for every preference share you get 2 ordinary shares.

Conversion price par value of preference shares/no. of ordinary shares to be acquired.

$$= \frac{20}{2} = \text{Shs}10$$

Example

Company XYZ Ltd has sold 10,000 ordinary shares of Shs.30 (partly called up) plus 20,000 Shs.45 preference shares, which are convertible. Compute the total number of ordinary shares after conversion.

Solution

Conversion ratio = 30/45 = 2/3 for every 2 preference shares you get 3 ordinary shares.

$$\frac{20{,}000}{1} \times \frac{3}{1} = 30{,}000 \text{ ordinary shares.}$$

Conversion price = $\frac{45}{3}/2 = \text{Shs.}30$

Total = 40,000 ordinary shares after conversion.

viii) Non-Convertible Preference Shares.

These cannot be converted into ordinary shares.

2. DEBT FINANCE

Debt finance is a fixed return finance as the cost (interest) is fixed on the par value (face value of debt). It is ideal to use if there"s a strong equity base. It is raised from external sources to qualifying companies and is available in limited quantities. It is limited to:

i) Value of security.
ii) Liquidity situation in a given country. It is ideal for companies where gearing allows them to raise more debt and thus gearing level.

Classification of Debt Finance

Loan finance – this is a common type of debt and is available in different terms usually short term. Medium term loans vary from 2 - 5 years. Long-term loans vary from 6 years and above

The terms are relative and depend on the borrower. This finance is used on the basis of Matching approach i.e. matching the economic life of the project to the term of the loan. It is prudent to use short- term loans for short-term ventures i.e. if a venture is to last 4 years generating returns, it is prudent to raise a loan of 4 years maturity period.

Conditions under Which Loans Are Ideal

a) When the company"s gearing level is low (the level of outstanding loans is low.
b) The company"s future cash flows (inflows and their stability) must be assured. The company must be able to repay the principal and the interest.
c) Economic conditions prevailing. The company must have a long-term forecast of the prevailing economic condition. Boom conditions are ideal for debt.
d) When the company"s market share guarantees stable sales.
e) When the company"s anticipated future expansion programs, justify such borrowing.

Requirements for Raising Loan

a) History of the company and its subsidiaries.
b) Names, ages, and qualifications of the company"s directors.
c) The names of major shareholders – 51% plus i.e. owner who must give consent.
d) Nature of the products and product lines.
e) Publicity of the product.
f) Nature of the loan – either secured, floating or unsecured.
g) Cash flow forecast.

Reasons Why Commercial Banks Prefer To Lend Short Term Loans

a) Long-term forecasts are not only difficult but also vague as uncertainties tend to jeopardise planning e.g. political and economic factors.
b) Commercial banks are limited by the Central Bank of Kenya in their long term lending due to liquidity considerations.
c) Short-term loans are profitable. This is because interest is high as in overdrafts.
d) Long term finance loses value with time due to inflation.

e) Cost of finance – in the long term, the cost of finance may increase and yet they cannot pass such a cost to borrowers since the interest rate is fixed.
f) Commercial banks do credit analysis that is limited to short term situations.

g) Usually security market favours short term loans because there are very few long term securities and as such commercial banks prefer to lend short term due to security problems.

Advantages of Using Debt Finance

- Interest on debt is a tax allowable expense and as such it is reduced by the tax allowance.

Example

Interest = 10% tax rate = 30%
The effective cost of debt (interest) = Interest rate(1 – T)
= 10%(1-0.30)
= 7%

Consider companies A and B

Company	A	B
	Sh."000"	Sh."000"
10% debt	1,000	-
Equity	-	1,000
	1,000	1,000

The tax rate is 30% and earnings before interest and tax amount to Ksh.400,000. All earnings are paid out as dividends. Compute payable by each firm.

Company	**A**	**B**
	Sh."000"	Sh."000"
EBIT	400	400
Less interest 10% x 1,000	(100)	-
EBT	300	400
Less tax @ 30%	(90)	(120)
Dividends payable	210	280

Company A saves tax equal to Sh.30,000(120,000 – 90,000) since interest charges are tax allowable and reduce taxable income.

- The cost of debt is fixed regardless of profits made and as such under conditions of high profits the cost of debt will be lower.
- It does not call for a lot of formalities to raise and as such its ideal for urgent ventures
- It is usually self-sustaining in that the asset acquired is used to pay for its cost i.e. leaving the company with the value of the asset.
- In case of long-term debt, amount of loan declines with time and repayments reduce its burden to the borrower.
- Debt finance does not influence the company"s decision since lenders don"t participate at the AGM.

Disadvantages

- It is a conditional finance i.e. it is not invested without the approval of lender.
- Debt finance, if used in excess may interrupt the companies decision making process when gearing level is high, creditors will demand a say in the company i.e. and demand representation in the BOD.
- It is dangerous to use in a recession as such a condition may force the company into receivership through lack of funds to service the loan.
- It calls for securities which are highly negotiable or marketable thus limiting its availability.
- It is only available for specific ventures and for a short term, which reduces its investment in strategic ventures.
- The use of debt finance may lower the value of a share if used excessively. It increases financial risk and required rate of return by shareholders thus reduce the value of shares.

Differences between Debt Finance and Ordinary Share Capital (Equity Finance)

	Ordinary share capital		**Debt**
a)	It is a permanent finance	a)	It is refundable (redeemable)
b)	Return paid when available	b)	It is fixed return capital
c)	Dividends are not tax allowable	c)	Interest on debt is a tax allowable expense
d)	Unsecured finance	d)	Secured finance
e)	Carry voting rights	e)	No voting right
f)	Reduces gearing ratio	f)	Increases gearing ratio
g)	No legal obligation to pay	g)	A legal obligation to pay
h)	Has a residue claim	h)	Carries a superior claim
i)	Owners" money	i)	Creditors finance.

Similarities between Preference and Equity Finance

a) Both may be permanent if preference share capital is irredeemable (convertible).
b) Both are naked or unsecured finances.
c) Both are traded at the stock exchange
d) Both are raised by public limited companies only
e) Both carry residue claims after debt.
f) Both dividends are not a legal obligations for the company to pay.

Differences between Preference and Equity Finance

	Ordinary share capital		Preference share capital
a)	Has a residue claim both on assets and profit	a)	Has a superior claim
b)	Carries voting rights	b)	No voting rights
c)	Reduces the gearing ratio	c)	Increases the gearing ratio
d)	Variable dividends hence grow over time	d)	Fixed dividends hence no growth
e)	Permanent finance	e)	Usually redeemable
f)	Easily transferable.	f)	Not easily transferable

Similarities between Debt and Preference Share Capital

a) Both have fixed returns.
b) Both will increase the company"s gearing ratio.
c) Both are usually redeemable.
d) Both do not have voting rights.
e) Both may force the company into receivership
f) Both have superior claims over and above owners.
g) Both are external finances.
h) There is no growth with time.

Differences between Preference Share Capital and Debt

	DEBT		PREFERENCE SHARE CAPITAL
a)	Interest is tax allowable	a)	Dividends are not tax allowable
b)	Interest is a legal obligation	b)	Dividends are not a legal obligation
c)	Debt finance is always secured	c)	Preference is not secured finance
d)	Debt finance is a pre-conditional	d)	Is not conditional finance
e)	Has a superior claim	e)	Has a residue claim (after debt)

Why It May Be Difficult For Small Companies To Raise Debt Finance In Kenya (Say Jua Kali Companies)

- Lack of security
- Ignorance of finances available
- Most of them are risky businesses as there are no feasibility studies done (chances of failure have been put to 80%).
- Their size being small tends to make them UNKNOWN i.e. they are not a significant competitor to the big companies.
- Cost of finance may be high – their market share may not allow them to secure debt.
- Small loans are expensive to extend by bank i.e. administration costs are very high.
- Lack of business principles that are sound and difficult in evaluating their performance.

Solutions to the Above Problems

- There should be diversification of securities e.g. to accept guarantees.
- Education of such businessmen on sound business principles.
- The government should set up a special fund to assist the jua kali businessmen.
- Encourage formation of co-operative societies.
- To request bankers to follow up the use of these loans.

3. Bills of Exchange

Bills of Exchange are a source of finance in particular in the export trade. A Bill of Exchange is an unconditional order in writing addressed by one person to another requiring the person to whom it is addressed to pay to him as his order a specific sum of money. The commonest types of bills of exchange used in financing are accommodation bills of exchange. For a bill to be a legal document; it must be

a) Drawn by the drawer.
b) Bear a stamp duty
c) Acceptable by the drawee
e) Mature in time.

It is used to raise finance through:

i) Discounting it.
ii) Negotiating
iii) Giving it out as security.

Advantages of Using a Bill as a Source of Finance

- They are a faster means of raising finance (if drawer is credible).
- Is highly negotiable/liquid investment
- Does not require security
- Does not affect the gearing level of the company
- It is unconditional and can be invested flexibly
- It is useful as a source of finance to finance working capital
- It is used without diluting capital.

4 Lease Finance

Leasing is a contract between one party called lessor (owner of asset) and another called lessee where the lessee is given the right to use the asset (without legal ownership) and undertakes to pay the lessor periodic lease rental charges due to generation of economic benefits from use of the assets. Leases can be short term (operating leases) in which case the lessor incurs the operating and maintenance costs of the assets or long term (finance leases) in which the lessee maintains and insure the assets.

Lease finance is ideal under the following conditions:

a) When the asset depreciates faster.
b) When the asset is subject to obsolescence
c) When the available asset cannot meet the contemplated expansion program
d) When the asset"s cost is prohibiting
e) If the asset is required seasonally
f) If the asset can generate returns to pay off lease charges in the short run.

Advantage of Leasing an Asset

- It does not tie up the company"s funds in an asset.
- The arrangement may ensure lessor bears the maintenance costs reducing the companies operating costs.
- The company has the option to purchase assets at the expiry of the lease period at which time it will know the viability of the asset.
- The company (lessee) will enjoy the lease charges as allowable expenses thus reducing taxable income and tax liability.
- Lease finance enables the lessee to use the asset to create financial surpluses which may then be used to buy assets.
- It is usually a long-term arrangement which enables the company to plan returns expected and operations which may be carried out.

Disadvantage of Leasing an Asset

- It is a pre-conditional finance (as on the use of asset)
- In the long term the lease charges may out-weigh the cost of buying own asset.
- It is available for a selected asset and this limits flexibility.
- It is useful for financing fixed assets and not working capital
- Lease finance may not be renewed leading to loss of business.
- Lease financing lowers the company"s credit rating (i.e. the asset in the balance sheet is shown as leased asset).

Reasons Why Lease Finance Is Not Well Developed In Kenya

- Lease charges are usually prohibitive i.e. the cost of finance is excessive.
- It may not be known to businessmen.
- Uncertainty as to returns from such assets i.e. the returns from such assets leased may not encourage the growth of lease finance.
- There is an imperfect market as a number of companies lease assets on basis of credibility of the lessee.
- Lack of flexibility i.e. a number of assets which are ideal for leasing are unavailable.
- Kenya"s financial markets are underdeveloped and this has affected the development of lease finance.
- After lease service is poor and this leads to loss of revenue.

5. Overdraft Finance

This finance is ideal to use as bridging finance in sense that it should be used to solve the company"s short term liquidity problems in particular those of financing working capital (w.c.). It is usually a secured finance unless otherwise mentioned. Overdraft finance is an expensive source of finance and the over-reliance on it is a sign of financial imprudence as it indicates the inability to plan or forecast financial needs.

Advantages of Overdraft Finance

- It is useful in financial crisis which an accountant cannot forecast due to abrupt fall in profits thus liquidity problems.
- In some cases it may be secured on goodwill thus making it flexible finance.
- It does not entail preconditions and is therefore investible in high-risk situations when the firm would not have finance in normal circumstances.
- It is raised faster and as usual is ideal to invest in urgent ventures e.g. documentary investments e.g. treasury bonds, shares, treasury bills, housing bonds etc.
- If not used for a long period of time – it does not affect the company"s gearing level and therefore does not relate to company"s liquidation or receivership.
- Less formalities/procedures involved.

Disadvantages of Overdraft Finance

- It is expensive as the interest rates of overdrafts are much higher than bank rates.
- The use of this finance is an indication of poor financial management principle.
- It may be misused by management because it does not carry pre-conditions
- Being a short-term financial arrangement, it can be recalled at short notice leaving the company in financial crisis.

6. Plastic Money (Credit Card Finance)

This is finance of a kind whereby a company will make arrangements for the use of the services of a credit card organisations (through the purchase of credit cards) in return for prompt settlement of bills on the card and a commission payable on all credit transactions. This is used to finance goods and services of working capital in nature such as the payment of fuel, spare-

parts, medical and other general provisions and it is rare for it to finance raw materials or capital items.

Reasons behind the Fast Development of This Finance (Plastic Money) In Kenya

a) High incidences of fraud by dishonest employees has been responsible for development of this finance as it minimises chances of this fraud because it eliminates the use of hard cash in the execution of transactions.

b) Risk associated with carrying of huge amounts of cash for purchases which cash is open to theft and misuse has also been responsible for development of this finance.

c) Credit cards have boosted the credibility of holder companies which enables them to obtain trade credits under conditions which would have otherwise been difficult.

d) Of late, Kenya has experienced emergence of elite, middle and high-income groups" in particular professionals who tend to use these cards as a symbol of status in execution of day to day transactions.

e) These cards have been used by financial institutions and banks to boost their deposit and attract long term clienteles e.g. Royal Card Finance, Standard Chartered.

f) A number of companies and establishments have acquired such cards as a means of settling their bills under certain times when their liquidity is low or when in financial crisis.

Limitations of Credit Cards as a Source of Finance

i) These cards leads to overspending on the part of the holder and as such may disorganise the organisation"s cash budget and cash planning.
ii) Limited as to the activities they can finance as they are ideal for financing working capital items and not fixed assets in which case they are not a profitable source of finance.
iii) They are expensive to obtain and maintain because of associated cost such as ledger fees, registration, insurance, commission expenses, renewal fees etc.
iv) It is a short-term source and is open only to a few establishments in which case a company can obtain goods and services from those establishments that can accept them.
v) Entail a lot of formalities to obtain e.g. guarantees, presentation of bank statements and even charging assets that are partially pledged to secure expenses that may be incurred using these cards.
vi) They may be misused by dishonest employees who may use them to defraud the organisation off goods and services which may not benefit such organisations.
vii) Credit card organisation may suspend the use of such cards without notice and this will inconvenience the holder who may not meet his/her ordinary needs obtained through these cards.

7. Debenture Finance

A form of long term debt raised after a company sells debenture certificates to the holder and raises finance in return. The term debenture has its origin from „DEBOE" which means „I owe" and is thus a certificate or document that evidences debt of long term nature whereby the person named therein will have given the issuing company the amount usually less than the total par value of the debenture. These debentures usually mature between 10 to 15 years but may be endorsed, negotiated, discounted or given as securities for loans in which case they will have been liquidated before their maturity date. The current interest rate is payable twice a year and it is a legal obligation.

Classification

i) Secured Debentures

These are those types of debentures which a company will secure usually in two ways, secured with a fixed charge or with a floating charge.

a) Fixed Charge – a debenture is secured with a fixed charge if it can claim on a specific asset.
b) Floating charge – if it can claim from any or all of the assets which have not been pledged as securities for any other form of debt.

ii) Naked Debentures

These are not secured by any of the company"s assets and as such they are general creditors.

iii) Redeemable Debentures

These are the type of debentures, which the company can buy back after the minimum redemption period and before the maximum redemption period (usually 15 years) after which holders can force the company to receivership to redeem their capital and interest outstanding.

iv) Irredeemable Debentures (perpetuities)

These are never bought back in which case they form permanent source of finance for the company. However, these are rare and are usually sold by company"s with a history of stable ordinary dividend record.

v) Classification according to convertibility

Convertible debentures – Can be converted into ordinary shares although they can also be converted into preference shares.

Conversion price = par value of a debenture/No. of shares to be received.

$$\text{Conversion ratio} = \frac{\text{Par value of debenture}}{\text{Par value of ordinary shares}}$$

Example

ABC Company Ltd books:

	Shs.
10.000, Sh.20 ordinary share capital	200,000
10,000, Shs.10 8% preference share capital	100,000
5,000, Shs.100 12% debentures	500,000

The above debentures are due for conversion:

Required

i) Compute the conversion price
ii) Compute the conversion ratio
iii) Compute new capital structure.

Solution

i) Conversion price = par value of debenture/No. of shares to be received.

No. of shares to be received = 100:20 = 5:1

Therefore = $\frac{100}{5} = 20$

ii) Conversion ratio = par value of debenture/par value of share = $\frac{100}{20}$ = 5.0 Receive 5 ordinary shares for every 1 debenture held.

iii) New capital structure

No. of new ordinary shares = 5000 x 5 = 25,000

	Shs.
35,000, Shs.20 ordinary shares	700,000
10,000, Shs.10, 8% preference shares	100,000
Total capital	800,000

vi) Non-convertible debentures

These cannot be converted into ordinary preference shares and they are usually redeemable.

vii) Sub-ordinate debentures

Usually last for as long as 10 years and they are sold by financially strong companies. Such are not secured and they rank among general creditors in claiming on assets during liquidation. This means that they are sub-ordinate to senior debt but superior to ordinary and preference share capital.

Reasons behind Unpopularity of Debentures of Kenya's Financial Market:

i) Their par value is an extremely high value and as such they are unaffordable to purchase by would be investors.
ii) They are in most cases secured debt and as such constrain the selling company in so far as getting sufficient securities is difficult.
iii) Most of the would-be sellers have low credit worthiness which is difficult.
iv) Kenya"s capital markets are not developed and as such there is no secondary debenture market where they can be discounted or endorsed.
v) Debentures finance is not known among the general business community and as such many would be sellers and buyers are ignorant of its existence.
vi) Being long term finance there are a few buyers who may be willing to stake their savings for a long period of time.
vii) Such finance calls for a fixed return, which in the long rum will be eroded by inflation.

8. Venture Capital

Venture capital is a form of investment in new small risky enterprises required to get them started by specialists called venture capitalists. Venture capitalists are therefore investment specialists who raise pools of capital to fund new ventures which are likely to become public corporations in return for an ownership interest. They buy part of the stock of the company at a low price in anticipation that when the company goes public, they would sell the shares at a higher price and therefore make a considerably high profit.

Venture capitalists also provide managerial skills to the firm. Example of venture capitalists are pension funds, wealthy individuals, insurance companies, Acacia fund, Rock fella, etc.

Since the goal of venture capitalists is to make quick profits, they will invest only in firms with a potential for rapid growth.
Venture capitalists, will only invest in a company if there is a reasonable chance that the company will be successful. Their publicity material states that successful investments have three common characteristics.

a) There is a good basic idea, a product or service which meets real customer needs.
b) There is finance, in the right form to turn the idea into a solid business.
c) There is the commitment and drive of an individual or group and the determination to succeed.

Attributes of venture capital

i) Equity participation – Venture Capital participate through direct purchase of shares or fixed return securities (debentures and preference shares)
ii) Long term investment – venture capital is an investment attitude that necessitates the venture capitalists to wait for a long time (5 – 10 years) to make large profits (capital gains).

iii) Participation in Management – Venture capitalists give their Marketing, Planning and Management Skills to the new firm. This hands – on Management enable them protect their investment.

Role of Venture Capital in Economic Development

The types of venture that capitalists might invest will involve:

a) **Business start-ups –** When a business has been set up by someone who has already put time and money into getting it started, the group may be willing to provide finance to enable it to get off the ground. With start-ups, venture capital often prefers to be one of several financial institutions putting in venture capital.
b) **Business development –** The group may be willing to provide development capital for a company which wants to invest in new products or new markets or to make a business acquisition, and so which so needs a major capital injection.
c) **Management buyout –** A management buyout is the purchase of all or parts of a business from its owners by its managers.
d) Helping a company where one of its owners wants to **realize all or part of his investment.** The venture capital may be prepared to buy some of the company"s equity.

Funding Venture Capital

When a company"s directors look for help from a venture capital institution, they must recognize that:

a) The institution will want an equity stake in the company.
b) It will need convincing that the company can be successful (management buyouts of companies which already have a record of successful trading have been increasingly favored by venture capitalists in recent years.
c) It may want to have a representative appointed to the company"s board, to look after its interests.

The directors of the company then contract venture capital organizations, to try to find one or more which would be willing to offer finance. A venture capital organization will only give funds to a company that it believes can succeed.

Reasons for Significant Growth in Venture Capital in the Developed Countries

i) Public attitude i.e a favourable attitude by the public at large towards entrepreneurship, success as well as failure.
ii) Dynamic financial system e.g efficient stock exchange and a competitive banking system.
iii) Government support – e.g taxation system to encourage venture capital e.g tax concessions and investment allowance taxes.
iv) Establishment of venture capital institutions e.g investors in the industry.
v) Growth in the number of Management buyers (MBO) which have created a demand for equity finance.

Constraints of Venture Capital in Kenya

1. Lack of rich investors in Kenya, hence inadequate equity capital.

2. Inefficiencies of stock market – NSE is inefficient and investors cannot sell the shares in future. Prices do not reflect all the available information in the market.
3. Infrastructural problems – this limits the growth rate of small firms which need raw materials and unlimited access to the market factors of production.
4. Lack of managerial skills on part of venture capitalists and owners of the firm.
5. Nature of small business in Kenya. There are 3 categories.
    a. Large MNC – these are established firms and can raise funds easily.
    b. Asian owned small businesses – They are family owned hence do not require interference of venture capitalists because they are not ready to share profits.
    c. African – owned business – need venture capital but have little potential for growth.
6. Focus on low risk ventures e.g confining to low technology, low growth sectors with minimum investment risks.
7. Conservative approach by the venture capitalists.
8. Delay in project evaluation e.g months or more hence entrepreneurs loose interest in the project.
9. Lack of government support and inefficient financial system.

Summary

In sum, venture capital, by combining risk financing with management and marketing assistance, could become an effective instrument in fostering developing countries. The experiences of developed countries and the detailed case study of venture capital however, indicate that the following elements are needed for the success of venture capital in any country.

- A broad-based (and less family based) entrepreneurial traditional societies and government encouragement for innovations, creativity and enterprise.
- A less regulated and controlled business and economic environment where attractive customer opportunities exists or could be created from high-tech and quality products.
- Existence of disinvestments mechanisms, particularly over-the counter stock exchange catering for the needs of venture capitalists.
- Fiscal incentives which render the equity investment more attractive and develops „equity cult" in investors.
- A more general, business and entrepreneurship oriented education system where scientists and engineers have knowledge of accounting, finance and economics and accountants understand engineering or physical sciences.
- An effective management education and training programme for developing professionally competent and committed venture capital managers; they should be trained to evaluate and manage high technology, high risk ventures.
- A vigorous marketing thrust, promotional efforts and development strategy, employing new concepts such as venture fair clubs, venture networks, business incubators etc. for the growth of venture capital.
- Linkage between universities/technology institutions, R & D. Organisations, industry, and financial institutions including venture capital firms.
- Encouragement and funding or R & D by private public sector companies and the government for ensuring technological competitiveness.

Disadvantages of Venture Capital

- Dilute ownership position of a firm
- Dilute control of a firm

REINFORCING QUESTIONS

QUESTION ONE

a) What are the practical difficulties of a small scale enterprise wishing to obtain credit to expand production? (10 marks)

b) Distinguish between internal and external sources of finance for a limited liability company. (10 marks)

QUESTIONTWO

a) Why do different sources of finance have different costs? (8 marks)

b) What are the advantages of having a farmers" bank compared with an ordinary commercial bank in the provision of services to farmers? (12 marks)

QUESTION THREE

a) What is venture capital? (4 marks)

b) Why is the market for venture capital not yet well developed in Kenya or your country? (16 marks)

QUESTION FOUR

a) Distinguish between debt and equity capital. (10 marks)

b) What are the advantages of leasing an asset compared to borrowing to buy an asset? (10 marks)

CHECK YOUR ANSWERS WITH THOSE GIVEN IN LESSON 10 OF THE STUDY PACK

COMPREHENSIVE ASSIGNMENT 1

TO BE SUBMITTED AFTER LESSON 2

To be carried out under Examination condition and sent to the Distance Learning Adminstrator for marking by the University.

ANSWER ALL QUESTIONS. TIME ALLOWED: THREE HOURS

QUESTION ONE

a) Why does ordinary share capital have a high cost relative to debt capital? (6 marks)
b) Identify the various methods of issuing new ordinary shares to shareholders. (15 marks)

QUESTION TWO

a) Outline the functions of a financial manager in a contemporary corporate set-up. (12 marks)
b) What are the weaknesses associated with profit maximisation goal? (8 marks)

QUESTION THREE

a) Explain the types of agency costs that arise in agent-principal relationship that exist between shareholders and managers. (10 marks)
b) Why does Financial management in private (commercial firms) differ from financial management in government/public sector. (10 marks)

QUESTIONFOUR

a) What are the disadvantages of Hire purchase as a source of finance? (6 marks)
b) Outline the necessary conditions for success of venture capital financing in Kenya. (10 marks)
c) Why is operating lease called off-balance sheet financing? (4 marks)

QUESTION FIVE

The Chuma Ngumu Company needs to finance a seasonal rise in inventories of Sh.4 million. The funds are needed for six months. The company is considering using the following possibilities to finance the inventories:

i) A warehouse loan from a finance company. The terms are 18 per cent annualised with an 80% advance against the value of the inventory. The warehousing costs are Sh.350,000 for the six-month period. The residual financing requirement which is Sh.4 million less the amount advanced will need to be financed by forgoing cash discounts on its payables. Standard terms are 2/10 net 30; however the company feels it can postpone payment until the fortieth day without adverse effect.

ii) A floating lien arrangement from the supplier of the inventory at an effective interest rate of 24 per cent. The supplier will advance the full value of the inventory.

iii) A bank loan from the company"s bank for Sh.4 million. The bank can lend at the rate of 22%. In addition, a 10% compensating balance will be required which otherwise would not be maintained by the company.

iv) Establish a one year line of credit. The commitment fees is 5% of the total borrowings. The interest rate is 17% p.a.

Required

Explain which is the cheapest option for the company? **(20 marks)**

END OF COMPREHESIVE ASSIGNMENT 1
NOW SEND TO DISTANCE LEARNING FOR MARKING

LESSON THREE

MEASURING BUSINESS PERFORMANCE: FINANCIAL STATEMENTS ANALYSIS

INSTRUCTIONS

- Read Chapter 3 of Financial Management textbook by I.M Pandey.
- Complete answers to **reinforcement** questions at the end of the lesson.
- Check model answers given in lesson 10 of the study pack.
- Reinforcing Comments

CONTENTS

- Definition and Users of Financial Statements
- Yard Stick Used In Ratio Analysis
- Classification Computation and interpretation of ratios
- Uses /Applications and limitation of ratios
- Financial forecasting

Definition

Financial analysis is a process by which finance identifies the company"s financial performances by comparing the entities in the balance sheet and those in the profit and loss account (P&L). This is so because balance sheet entities are usually responsible for those to be found in the P&L i.e. assets shown in the balance sheet are responsible for sales, revenue and expenses to be found in the P&L. This analysis is important to various parties with a financial stake in the company. These include:

1. Shareholders – Actual owners are interested in the company"s both short and long term survival. For this reason they will use ratio"s such as:

    a) Profitability ratios – which seek to establish viability.
    b) Dividend ratios – which seek to establish return to owners in form of dividends. The common ratios include earning yield (E/Y), Dividend pay out ratio (DPO), dividend yield, Price earning ratio, all of which will measure return to owner.

2. Creditors (trade) – these are interested in the company"s ability to meet their short-term obligations as and when they fall due. For this reason they will use ratios such as:

    a) Liquidity ratio – a qualitative measure of company"s liquidity position measured by acid test ratio.
    b) Current ratio – which is a measure of company"s quantity of current assets against current liabilities.

3. Long term lenders – These include finances through loans, mortgages and debenture holders. These have both short and long term interest in the company and its ability to pay not only interest on debt but also principal as and when it falls due. These parties are interested in the following:

    a) Liquidity ratios – used to assess short-term liability to meet current obligations.
    b) Profitability ratios – used to ascertain whether the company can pay its principal back.
    c) Gearing ratio – used to gauge the company"s risk in the investment.
    d) Investment coverage ratio – shows the company"s safety as regards the payment of interest to the lenders of the debt.

4. Directors and management of company – They will therefore be interest in:

    a) Efficiency of the company in generating profits.
    b) The company"s viability from the investor"s point of view and the company"s ability to generate sufficient returns to investors.
    c) Gearing ratio to gauge the safety and risk associated with the company.

5. Potential investors – these parties are interested in a company in total both on short and long term basis in particular the company"s ability to generate acceptable return on their money.

Therefore, they will use:

a) Dividend ratios
b) Return ratios
c) Gearing ratios

6. Government – The Government is interested mostly in utility companies (e.g. KPLC, KPTC) and those that will provide public services – in this case the government will be interested in their survival and thus ability to provide those services. It may be interested in taxation derived from these companies which is used for development. Government may also be interested in employment level and as such it will use those ratios that can enable it to achieve such objectives of particular importance are:

a) Profitability ratios
b) Return ratios

7. Competitors – These are interested in the company"s performance from the market share point of view and will use the ratios that enable them to ascertain company"s competitive strength e.g. profitability ratios, sales and returns ratio etc.

8. General public – Customers and potential customers – These are interested in the ability of the company to provide good services both in the short and long run. To gauge the company"s ability to provide goods and services on short and long term basis. We have:

a) Returns ratio
b) Sales ratio

YARD STICK USED IN RATIO ANALYSIS

1. Past performance of the company

The company"s past performance (past ratio) is used to measure or gauge the company"s performance and in particular the change in performance whether good (favourable), better, same or even worse than the past. Such comparison is then used to interpret the company"s performance bearing in mind the factors that influenced the present and past performances.

2. Average industry ratios

These are useful as they indicate the average performance of various companies in a given industry i.e. it gives the minimum performance of a number of companies in a given industry. These ratios are useful in so far as to enable the analyst to make a reasonable comparison of the company"s performance vis-à- vis other companies in the same industry. However, for this yardstick to be useful the term average should include those companies which are not extremely. I.e. very strong and very weak companies – which should be excluded to arrive at industry average figures.

3. Ratio of successful companies

Useful if the company can get figures of competitors who are leading in the market so as to enable it to gauge its performance against better performance. However this information is difficult to obtain and sometimes it calls for private investigators e.g. Private Eyes Ltd.

4. Ratio of budgeted performance

These are compared with actual performance ratios and investigations are made of any unfavorable variance which should be explained.

Classification of Ratios

Ratios are broadly classified into 5 categories:

1. Liquidity ratios
2. Turnover ratios
3. Gearing ratios
4. Profitability ratios
5. Growth and valuation ratios

1. Liquidity Ratios

Also called working capital ratios. They indicate ability of the firm to meet its short term maturing financial obligation/current liabilities as and when they fall due.

The ratios are concerned with current assets and current liabilities. They include:

a) Current ratio $= \frac{\text{Current Assets}}{\text{Current liabilities}}$

This ratio indicates the No. of times the current liabilities can be paid from current assets before this assets are exhausted.

The most recommended ratio is 2.0 i.e. the current asset must at least be twice as high as current liabilities

b) Quick/acid test ratios $= \frac{\text{Current Asset - Stock}}{\text{Current liabilities}}$

Is a more refined current ratio which exclude amount of stock of the firm. Stocks are excluded for two basic reasons.

i) They are valued on historical cost basis
ii) They may not be converted into cash very quickly

The ratio therefore indicates the ability of the firm to pay its current liabilities from the more liquid assets of the firm.

c) Cash ratio $= \frac{\text{Cash in hand/bank + short term marketable securities}}{\text{Current liabilities}}$

This is a refinement of the acid test ratio indicating the ability of the firm to meet its current liabilities from its most liquid resources.
Short term marketable securities refers to short term investment of the firm which can be converted into cash within a very short period e.g commercial paper and treasury bills.

d) Net working capital Ratio $= \frac{\text{Networking Capital}}{} \times 100$

$$\frac{\text{Net Assets}}{}$$

Where Net Assets or Capital employed = Total Assets – Current liability

This ratio indicates the proportions of total net assets which is liquid enough to meet the current liabilities of the firm.

It is expressed in % term.

2. Turnover Ratios/efficiency/asset management ratio

Turnover ratio indicate the efficiency with which the firm utilised the asset or resources at its disposal to generate sales revenue or turnover.

This ratio includes:

a) Stock/inventory turnover $= \frac{\text{Cost of Sales}}{\text{Average stock}}$

The ratio indicate number of times the stock was turned into sales in a year i.e how many times did the „buy-sell" process occur dur ing the year. The higher the stock turnover, the better the firm and more likely the higher the sales.

b) Stock holding period $= \frac{365 \text{ days}}{\text{Stock turnover}}$

$= \frac{365 \times \text{Average stock}}{\text{Cost of sales}}$ i.e $\frac{365}{\text{Stock turnover}}$

The ratio indicates number of days the stock was held in the warehouse before being sold.

The higher the stock turnover, the lower the stock holding period and vice versa.

c) Debtors/accounts receiver turnover $= \frac{\text{Annual credit sales}}{\text{Average debtor}}$

The ratio indicate the number of times/frequency with which credit customers or debtors were turned into sale i.e the number of times they come to buy on credit per year after paying their dues to the firm.
The higher the debtors turnover the better the firm indicating that customers came to buy on credit many times thus they paid within a short period.

d) Debtors collection period $= \frac{365}{\text{Debtors turnover}}$

or $\frac{365 \times \text{Average debtors}}{\text{Annual credit sales}}$

This refers to credit period that was granted to the debtors on the period within which they were supposed to pay their dues to the firm.

The shorter the collection period/credit period the higher the debtors turnover and vice versa.

If no opening debtors are given use the closing debtors to represent average debtors.

e) Creditors/accounts payable turnover = $\frac{\text{Annual credit purchases}}{\text{Average creditors}}$

- The firm buy goods on credit from suppliers.
- The ratio indicate number of times p.a. the firm bought goods on credit after paying the suppliers.
- If the creditors turnover is high, this indicates that the payment was made
- within a short period of time.

f) Creditors payment period = $\frac{365}{\text{Creditors turnover}}$

= $\frac{365 \times \text{Average creditors}}{\text{Annual credit purchases}}$

- The ratio indicate the credit period granted by the suppliers i.e. the period
- within which the firm should pay its liabilities to the suppliers.
- The shorter the period the higher the creditors turnover and vice-versa.

g) Fixed asset turnover = $\frac{\text{Annual Sales}}{\text{Fixed Assets}}$

- This ratio indicate the efficiency with which, the fixed assets were utilised to generate sales revenue e.g. a ratio of 1.4 means one shilling of fixed assets was utilised to generate Sh.1.4 of sales.

h) Total asset turnover = $\frac{\text{Annual sales}}{\text{Total assets}}$

- The ratio indicate amount of sales revenue generated from utilisation of one shilling of total asset.

The Concept of Working Capital/Cash Operating Cycle

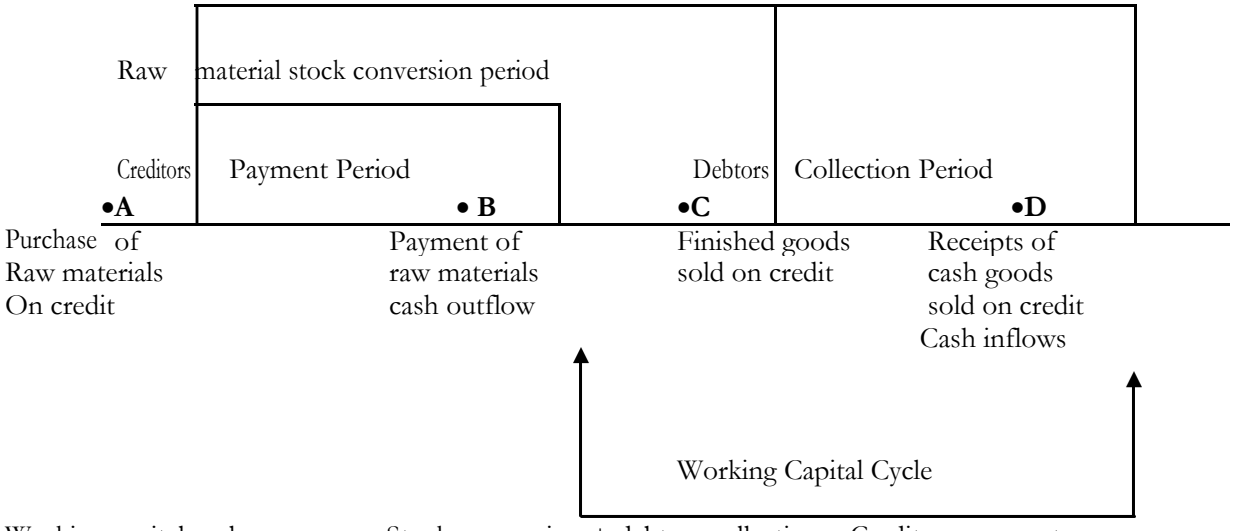
Working capital cycle refers to period that elapses between the payment for raw materials bought on credit (cash outflows) and the receipts of cash from finished goods sold on credit (cash inflows).

The working capital cycle will involve the following:

a) Purchase of raw materials on credit from suppliers
b) Payment of raw materials after the lapse of credit period
c) Conversion of raw materials into finished goods
d) Sale of finished goods to creditors
e) Receipt of cash from debtors.

Measuring Business Performance

This can be illustrated using a diagram as follows:



Working capital cycle = Stock conversion + debtors collection – Creditors payment

From the diagram the working capital cycle of a period will be determined as follows:

Stock conversion period + Debtors collection period – Creditors payment period

Note

A lengthy working capital cycle is an indicator of poor management of stock and debtors reflecting low turnover of stock and debtors and lengthy stockholding period and debtors collection period.

The working capital cycle can be reduced in any of the following ways:

1. Negotiate for a longer credit period with the suppliers
2. Reduce the stock conversion period or manufacturing period.
3. Reduce the debtors collection period by granting short crediting period. This can be achieved through offering discounts to customers to encourage them to pay earlier.
4. Holding fast moving goods to ensure high turnover.
5. Timely delivery of raw materials by suppliers especially if any delay in delivery will lengthen the raw materials holding period.

3. Gearing/Leverage/Capital Structure Ratio

- The ratio indicate the extent in which the firm has borrowed fixed charge capital to finance the acquisition of the assets or resources of the firm.
- The two basic gearing ratios are:

a) Debt/equity ratio = $\frac{\text{Fixed charge capital}}{\text{Equity (net worth)}}$

This ratio indicate the amount of fixed charge capital in the capital structure of the firm for every one shilling of owners capital or equity e.g a ratio of 0.78 means for every Sh.1 of equity there is Sh.0.78 fixed charge capital.

b) Fixed charge to total capital ratio = $\frac{\text{Fixed charge capital}}{\text{Total capital employed}} \times 100$

Where total capital employed = Fixed charge capital + equity relative to total capital employed by the firm e.g a ratio of 0.38 means that, 38% of the capital employed is fixed charge capital.

Other leverage or gearing ratios are

a) Debt ratio = $\frac{\text{Total debts}}{\text{Total assets}}$

Where total debt = fixed charge capital + liabilities.

The ratio indicate the proportion of total assets that has been financed using long term and current liabilities e.g a debt ratio of 0.45 mean 45% of total asset has been financed with debt while the remaining 55% was financed with owners equity/capital.

b) Times interest earned ratio = $\frac{\text{Operating profit (earning before interest and tax}}{\text{Interest Charges}}$

TIER also called interest coverage ratio.

This ratio indicate the number of times interest charges can be paid from operating profit. The higher the TIER, the better the firm indicating that either the firm has high operating profits or its interest charges are low.

If TIER is high due to low interest charges, this indicates low level of gearing/debt capital of the firm.

4. Profitability Ratio

This ratio indicate the performance of the firm in relation to its ability to derive returns or profit from investment or from sale of goods i.e profit margin or sales.

1. Profitability in relation to sales

- The ratio indicate the ability of the firm to control its cost of sales, operating and financing expenses.
- They include:

a) Gross profit margin = $\frac{\text{Gross profit}}{\text{Sales}} \times 100$

The ratio indicate the ability of the firm to control cost of sales expenses e.g gross profit margin of 40% means 60% of sales revenue was taken up by cost of sales while 40% was the gross profit.

b) Operating profit margin = Operating profit/Earning before interest & tax / Sales

The ratio indicates ability of the firm to control its operating expenses such as distribution cost, salaries and wages, travelling, telephone and electricity charges etc. e.g a ratio of 20% means:
i) 80% of sales relate to both operating and cost of sales expenses
ii) 20% of sales remained as operating margin profit

c) Net profit margin = Net profit x 100 / (earning after tax) + interest Sales

This ratio indicates the ability of the firm to control financing expenses in particular interest charges e.g. Net profit margin of 10% indicate that:

i) 90% of sales were taken up by cost of sales, operating and financing expenses
ii) 10% remained as net profits.

2. Profitability in relation to investment

a) Return on Investment (ROI) or return on total asset (ROTA) = Net profit x 100 / Total asset

The ratio indicate the return on profit from investment of Sh.1 in total assets e.g a ratio of 20% means Sh.10 of total asset generated Sh.2 of net profit.

b) Return on equity (ROE) or Return on net worth (RONW) or Return on shareholders equity (ROSE) = Net profit x 100 / equity

The ratio indicate the return of profitability for every one shilling of equity capital contributed by the shareholders e.g a ratio of 25% means one shilling of equity generates Sh.0.25 profit attributable to ordinary shareholders.

c) Return on capital employed ROCE = Net profit x 100 / or Return on net asset (RONA) Net Asset (Capital employed)

This ratio indicate the returns of profitability for every one shilling of capital employed in the firm.

5. The Growth and Valuation Ratio

This ratio indicates the growth potential of the firm in addition to determining the value of the firm and investment made by various investors. They include the following:

a) Earnings per share EPS = Earnings to Ordinary shareholders No. of ordinary shares

This ratio indicate earnings power of the firm i.e how much earnings or profits are attributed to every share held by an investor. The higher the ratio the better the firm.

b) Earnings yield (EY) = Earnings per share x 100

Market price per share

- The market price per share (MPS) is the price at which new shares can be bought from the stock market.
- These ratios therefore indicate the returns or earnings for every one shilling invested in the firm.

c) Dividends per share (DPS) = $\frac{\text{Dividend paid}}{\text{No. of ordinary shares}}$

- This indicates the cash dividend received for every share held by an investor. If all the earnings attributable to ordinary shareholders were paid out as dividend, then EPS = DPS.

d) Dividend Yield (DY) = $\frac{\text{Dividend per share}}{\text{Market price per share}} \times 100$

Or $\frac{\text{Dividend paid}}{\text{Market value of equity}}$

Where market value of equity = No. of shares x MPS

- This ratio indicates the cash dividend returns for every one shilling invested in the firm.

e) Price earnings (P/E) Ratio = $\frac{\text{Market price per share (MPS)}}{\text{Earning per share}}$

OR

= $\frac{\text{Market value of equity}}{\text{Earning to Ord. Shareholders}}$

- P/E ratio is a reciprocal of earning yield (EY). The MPS is the price at which a new share can be bought i.e investment per share. The EPS is the annual income/earnings from each share.
- PE therefore indicate the payback period i.e number of years it will take to recover MPS from the annual earnings per share of the firm.

f) Dividend cover = $\frac{\text{EPS}}{\text{DPS}} = \frac{\text{Earning to ordinary shares}}{\text{Dividend paid}}$

- This indicate the number of times dividend can be paid from earnings to ordinary shareholders. The higher the DPS the lower the dividend cover and vice-versa e.g consider the following two firms X and Y

	X	Y
EPS	12/=	12/=
DPS	3/=	5/=
Dividend cover	$\frac{12}{3}$=4	$\frac{12}{5}$ = 2.4 times

g) Dividend pay out ratio = $\frac{\text{DPS}}{\text{EPS}} \times 100 = \frac{\text{Dividend paid}}{\text{Earning to ordinary shareholder}}$

- This is the reciprocal of dividend cover. It indicates the proportion of earnings that was paid out as dividend e.g a payout ratio of 40% means 60% of earnings were retained while 40% was paid out as dividend, therefore retention ratio = 1 – dividend payout ratio

h) Book value per share (BVPS) $= \frac{\text{Networth Equity}}{\text{No. of ordinary shares}}$

- This is also called liquidity ratio which indicates the amount attributable to each share if the firm was liquidated and all asset sold at their book value.
- The ratio is based on the residual amount which would remain after paying all liabilities from the sales proceeds of the assets.

i) Market to book value per share $= \frac{\text{MPS}}{\text{BVPS}}$

- This ratio indicates the amount of goodwill attached to the firm i.e the price in excess of the sales value of the assets of the firm. If the ratio is greater 1(MBVPS >1) this indicate a positive goodwill while if less than 1 a –ve goodwill.

Uses/Application of Ratios

Ratios are used in the following ways by managers in various firms.

1. Evaluating the efficiency of assets utilisation to generate sales revenue i.e turnover ratio.
2. Evaluating the ability of the firm to meet its short term financial obligation as and when they fall due (liquidity ratios).
3. To carry out industrial analysis i.e compare the firm"s performance with the average industrial performance of the firm with that of individual competitors in the same industry.
4. For cross sectional analysis i.e compare the performance of the firm with that of individual competitors in the same industry.
5. For trend/time series analysis i.e evaluate the performance of the firm over time.
6. To establish the extent which the assets of the firm has been financed by fixed charge capital i.e use of gearing ratio
7. To predict the bankruptcy of the firm i.e use of selected ratios to determine the overall ratio usually called Z-score. The Z-score when compared with a pre-determined acceptable a Z-score will indicate the probability of the bankruptcy of the firm in future.

Limitations of Ratios

Ratios have the following weaknesses:

1. They ignore the size of the firm being compared e.g in cross-sectional analysis, the firm being compared might be of different size, technology and product diversification.
2. Effect of inflation:
   Ratio ignores the effect of inflation in performance e.g increase in sales might be due to increase in selling price caused by inflationary pressure in the economy.
3. Ratios ignore qualitative or non-quantifiable aspects of the firm e.g important assets such as corporate image, efficient management team, customer loyalty, quality of product, technological innovation etc are not captured in ratio analysis.

4. Ratios are computed only at one point in time i.e they are subject to frequent changes after computation e.g liquidity ratios will constantly change as the cash, debtors and stock level changes.
5. Monopolistic firms
   It is difficult to carry out industrial and cross-sectional analysis for monopolistic firms since they do not have competitors and they are the only firms in the whole industry e.g Telkom-Kenya, East Africa Brewery etc.
6. Historical Data – Ratios are computed in historical information or financial statement thus may be irrelevant in future decision-making of
7. Computation and interpretation
   Generally some ratios do not have an acceptable standard of computation. This may differ from one industry to another. E.g the return on investment may be computed as:

$$\text{Return on investment} = \frac{\text{EBIT}}{\text{Total assets}} \quad \text{or} \quad \frac{\text{EAT}}{\text{Total assets}}$$

8. Different accounting policies – Different firms in the same industry use different accounting policies e.g methods of depreciation and stock valuation. This makes comparison difficult.

Financial Forecasting

Financial forecasting refers to determination of financial requirements of the firm in advance. This requires financial planning using budgets.

The financial planning and forecasting will also determined the activities the firm should undertake in order to achieve its financial targets.

Financial forecasting is important in the following ways:

1. Facilitate financial planning i.e determination of cash surplus or deficit that are likely to occur in future.
2. Facilitate control of expenditure. This will minimise wastage of financial resources in order to achieve financial targets.
3. It avoids surprise to the managers e.g any cash deficit is known well in advance thus the firm can plan for sources of short term funds such as bank drafts or short term loans.
4. Motivation to the employees – Financial forecasting using budgets and targets will enhance unity of purpose and objectives among employees who are determined to achieve the set target.

Methods/Techniques of Financial Forecasting

1. Use of Cash Budgets

A cash budget is a financial statement indicating:

a) Sources of revenue and capital cash inflows
b) How the inflows are expended to meets revenue and capital expenditure of the firm.
c) Any anticipated cash deficit/surplus at any point during forecasting period.

2. Regression Analysis

This is a statistical method which involves identification of dependant and independent variable to form a regression equation *y = a + bx) on which forecasting will be based.

3. Percentage of Sales Method

This method involves expressing various balance sheet items that are directly related to sales as a percentage of sales. It involves the following steps:

i) Identify various balance sheet items that are directly with sales this items include:

a) Net fixed asset – If the current production capacity of the firm is full an increase in sales will require acquisition of new assets e.g. machinery to increase production.

b) Current Asset – An increase in sales due to increased production will lead to increase in stock of raw materials, finished goods and work in progress. Increased credit sales will increase debtors while more cash will be required to buy more raw materials in cash.

c) Current liabilities – Increased sales will lead to purchase of more raw materials

d) Retained earnings – This will increase with sales if and only if, the firm is operating profitability and all net profits are not paid out as dividend.

Note

The increase in sales does not require an increase in ordinary share capital, preference share capital and debentures since long term capital is used to finance long term project.

ii) Express the various balance sheet items varying with sales as percentage of sales e.g. assume for year 2002 stock and net fixed assets amount to Sh.12M and 18M respectively sales amount to Sh.40M. Therefore stock as percentage of sales"

$$\text{Stock} = \frac{12M}{40M} \times 100 = 30\%$$

$$\text{Fixed asset} = \frac{18M}{40M} \times 100 = 45\%$$

iii) Determine the increase in total asset as a result of increase in sales e.g suppose sales increases from Sh.40 M to Sh.60 M during year 2003. The additional stock and net fixed asset required would be determined as follows:

Increase in stock = % of sales x increase in sales

= 30% (60 – 40) = Sh.6M

Increase in fixed asset = % of sales x increase in sales

= 45%(60 – 40) = Sh.9 M

iv) Determine the total increase in assets which will be financed by:

a) Spontaneous source of finance i.e increase in current liabilities Where Increase = % of sales x increase in sales

b) Retained earnings for the forecasting period

Retained earnings = Net profit – Dividend paid

$$\text{Net profit margin} = \frac{\text{Net profit}}{\text{Sales}}$$

Therefore: Net profit = Net profit margin (%) x sales

Note

Generally Net profit margin is called after tax return on sales.

- Out of the total assets that are required as a result of increase in sales, the financing will come from the two sources identified. Any amount that cannot be met from the two sources will be borrowed externally on short term basis which will be a current liability.

Assumptions underlying % of sales method

The fundamental assumption underlying the use of % of sales method is that, there is no inflation in the economy i.e the increase in sales is caused by increase in production and not increase in selling price.

Other assumptions include:

1. The firm is operating at full or 100% capacity. Therefore the increase in production will require acquisition of new fixed assets.
2. The firm will not issue new ordinary shares or debenture or preference shares thus this capital will remain constant during the forecasting period.
3. The relationship between balance sheet item and sales i.e balance sheet items as % of sales will be maintained during forecasting period.
4. The after tax, profit on sale or net profit margin will be achieved and shall remain constant during the forecasting period.

Illustration

The following is the balance sheet of XYZ Ltd as at 31st December 2002:

	Sh."000"
Net fixed asset	300
Current assets	100
	400
Financed by:	
Ordinary share capital	100
Retained earnings	70
10% debentures	150
Trade creditors	50
Accrued expenses	30
	400

Additional Information

1. The sales for year 2002 amounted to Sh.500,000. The sales will increase by 15% during year 2003 and 10% during year 2004.

2. The after tax return on sales is 12% which shall be maintained in future.
3. The company"s dividend payout ratio is 80%. This will be maintained during forecasting period.
4. Any additional financing from external sources will be affected through the issue of commercial paper by company.

Required

a) Determine the amount of external finance for 2 years upto 31st December 2004.
b) Prepare a proforma balance as at 31 December 2004

Solution

Identify various items in balance sheet directly with sales:

- Fixed Asset
- Current Asset
- Trade creditors
- Accrued expenses

Net fixed assets = $\frac{300M}{500M} \times 100 = 60\%$

Current Assets = $\frac{100M}{500M} \times 100 = 20\%$

Trade creditors = $\frac{50}{500} \times 100 = 10\%$

Accrued expenses = $\frac{30}{500} \times 100 = 6\%$

c) Compute the increase in sales over the 2 years.

Year 2002 sales = $500 \times \frac{115}{100} = 575M$

Year 2003 sales = $575 \times \frac{115}{100} = 632.5M$

Increase in sales in 2003-03-26= 632.5 – 500 = 132.5M

d) Compute the amount of external requirement of the firm over the 2 years of forecasting period.

i)	Increase in F. Assets	= % of sales x increase in sales		
		= 60% x 132.5	=	79.5M
ii)	Increase in C. Assets	= % of sales x increase in sales		
		= 20% of 132.5	=	26.5M
	Total additional investment/asset required			106M

Interpretation

For the company to earn increase in sales of 132.5M it will have to acquire additional assets costing 106M.

				Sh.'000'
Additional investment/asset required				106,000
Less: Spontaneous source of finance				
Increase in creditors	= % of sales x increase in sales			
	= 132,500 x 10%			(13,250)
Increase in accrued expenses	= % of sales x increase in sales			
	= 132,500 x 6%			(7,950)
Less: Retained earnings during 2 years of operation (initial sources)				
Net profit for 2003	= Net profit margin x sales of 2003			
	= 12% of 575,000	=	69,000	
Less: Dividend payable 80% of 69,000		=	55,200	(13,800)
Net profit for 2004	= Net profit margin x sales of 2004			
	= 12% of 632,500	=	75,900	
Less: dividend payable 80% of 75,900		=	60,720	(15,180)
External financial needs (commercial paper)				55,820

Proforma Balance Sheet

This refers to the projected balance sheet at the end of forecasting period. The items in the proforma balance which vary with sales would be determined in any of the following two ways:

i) % of sales x sales at last year of forecasting (2004); or
ii) Balance sheet item before forecasting plus increase in balance sheet item as a result of increase in sales.

Proforma balance sheet as at 31st December 2004

	Shs.
Net fixed assets 60% x 632.5 or 300 + 79.5	379.50
Current Assets 20% x 632.5 or 100 + 26.5	126.50
	506.00
Ordinary shares (will remain constant)	100.00
Retained earning 70 + 13.8 + 15.18	98.98
10% debenture (remain constant)	150.00
Trade creditor 10% x 632.5 or 50 + 13.25	63.25
Accrued expenses 6% x 632.5 or 30 + 7.95	37.95
External borrowing – commercial	55.82
	506.00

REINFORCING QUESTIONS

QUESTION ONE

An extract from the finance statements of Kenyango Fisheries Ltd is shown below:

	Shs.
Issued share capital:	
150,000 ordinary shares of Sh.10 each fully paid	1,500,000
10% loan stock 1999	2,000,000
Share premium	1,500,000
Revenue Reserve	7,000,000
Capital employed	12,000,000

- The profits after 30% tax is Sh.600,000. However, interest charge has not been deducted.
- Ordinary dividend payout ratio is 40%.
- The current market value of ordinary shares Shs.36

Required

a) Return on capital employed
b) Earnings per share
c) Price earnings ratio
d) Book value per share
e) Gearing ratio
f) Market to book value per share

QUESTION TWO

The following financial statements relate to the ABC Company:

Assets	**Shs.**	**Liabilities & Net worth**	**Shs.**
Cash	28,500	Trade creditors	116,250
Debtors	270,000	Notes payable (9%)	54,000
Stock	649,500	Other current liabilities	100,500
Total current assets	948,800	Long term debt (10%)	300,000
Net fixed assets	285,750	Net worth	663,000
	1,233,750		1,233,750

Income Statement for the year ended 31 March 1995

	Shs.
Sales	1,972,500
Less cost of sales	1,368,000
Gross profit	604,500
Selling and administration expenses	498,750
Earning before interest and tax	105,750
Interest expense	34,500
	71,250
Estimated taxation (40%)	28,500

Earnings after interest and tax	42,750

Required

a) Calculate:

i) Inventory turnover ratio; (3 marks)
ii) Times interest earned ratio; (3 marks)
iii) Total assets turnover; (3 marks)
iv) Net profit margin (3 marks)

(Note: Round your ratios to one decimal place)

b) The ABC Company operates in an industry whose norms are as follows:

Ratio	Industry Norm
Inventory turnover	6.2 times
Times interest earned ratio	5.3 times
Total assets turnover	2.2 times
Net profit margin	3%

Required

Comment on the revelation made by the ratios you have computed in part (a) above when compared with the industry average.

QUESTION THREE

The following information has been extracted from the published accounts of Pesa Corporation Limited, a company quoted on the Nairobi Stock Exchange.

	Shs.
Net profit after tax and interest	990,000
Less: dividends for the period	740,000
Transfer to reserves	250,000
Accumulated reserves brought forward	810,000
Reserves carried forward	1,060,000
Share capital (Sh.10 par value)	Sh.8,000,000
Mar02ket price per share now	12%

Required

a) What is meant by a company quoted on the Nairobi Stock Exchange? (6 marks)

b) Calculate for Pesa Corposation Limited the following ratios and indicate the importance of each to Miss Hisa, a Shareholder:

i) Earnings per share. (4 marks)
ii) Price earnings ratio (4 marks)
iii) Dividend yield (4 marks)
iv) Dividend cover (4 marks)

(Total: 22 marks)

QUESTION FOUR

The executive director of Pesa Ltd has circulated the following information as part of board paper:

Pesa Ltd.
Financial Performance for the year ended 31 March:

		1999	1998
i)	Return on investment	12%	10%
ii)	Gross profit on sales	25%	20%
iii)	Number of days credit given	30 days	45 days
iv)	Administrative cost of sales	7%	10%

Required

a) Brief report on each of the above 4 ratios indicating the reservation, if any, you may have or judging them as improvement in performance.

b) Tajiri Ltd has sales of Sh.20,000,000 in 1998. Beginning and closing stock was Sh.800,000 and Sh.2,200,000 respectively. G.P. margin is usually 25% of sales.

Required

i) Stock turnover ratio
ii) Number of days stock held

iii) Brief explanation on how the ratio computed in (i) above can be improved and financial Consequences of such action.

CHECK YOUR ANSWERS WITH THOSE PVOVIDED IN LESSON 10 OF THE STUDY PACK

LESSON FOUR

CAPITAL STRUCTURE AND COST OF FUNDS

INSTRUCTIONS

- Read Chapter 13 of Financial Management text book by I.M. Pandey
- Complete answers to **reinforcement** questions at the end of the lesson.
- Check model answers given in lesson 10 of the study pack.

CONTENTS

- Cost of Capital Structure Decisions
- Term Structure of interest rate
- Models of computing cost of capital
- The weighting Average cost of capital
- Marginal cost of capital

and Cost of Funds

CAPITAL STRUCTURE

Factors That Affect Capital Structure

1. Availability of securities – This influences the company"s use of debt finance which means that if a company has sufficient securities, it can afford to use debt finance in large capacities.
2. Cost of finance (both implicit and explicit) – If low, then a company can use more of debt or equity finance.
3. Company gearing level – if high, the company may not be able to use more debt or equity finance because potential investors would not be willing to invest in such a company.
4. Sales stability – If a company has stable sales and thus profits, it can afford to use various finances in particular debt in so far as it can service such finances.
5. Competitiveness of the industry in which the company operates – If the company operates in a highly competitive industry, it may be risky to use high levels of debt because chances of servicing this debt may be low and may lead a company into receivership.

COST OF FINANCE

Definition

This is the price the company pays to obtain and retail finance. To obtain finance a company will pay implicit costs which are commonly known as floatation costs. These include: Underwriting commission, Brokerage costs, cost of printing a prospectus, Commission costs, legal fees, audit costs, cost of printing share certificates, advertising costs etc. For debt there are legal fees, valuation costs (i.e. security, audit fees, Bankers commission etc.) such costs are knocked off from:

i) The market value of shares if these have only been sold at a price above par value.
ii) For debt finance – from the par value of debt.

I.e. if flotation costs are given per share then this will be knocked off or deducted from the market price per share. If they are given for the total finance paid they are deducted from the total amount paid.

Cost of Retaining Finance

This will include dividends for share capital and interest for debt finance (tax deducted) or effective cost of debt. However, when computing the cost of finance apart from deducting implicit costs, explicit costs are the most central elements of cost of finance.

Importance of Cost of Finance

The cost of capital is important because of its application in the following areas:

i) Long-term investment decisions – In capital budgeting decisions, using NPV method, the cost of capital is used to discount the cash flows. Under IRR method the cost of capital is compared with IRR to determine whether to accept or reject a project.
ii) Capital structure decisions – The composition/mix of various components of capital is determined by the cost of each capital component.

iii) Evaluation of performance of management – A high cost of capital is an indicator of high risk attached to the firm. This is usually attributed to poor performance of the firm.

iv) Dividend policy and decisions – E.g if the cost of retained earnings is low compared to the cost of new ordinary share capital, the firm will retain more and pay less dividend. Additionally, the use of retained earnings as an internal source of finance is preferred because:

- It does not involve any floatation costs
- It does not dilute ownership and control of the firm, since no new shares are issued.

v) Lease or buy decisions – A firm may finance the acquisition of an asset through leasing or borrowing long-term debt to buy an asset. In lease or buy decisions, the cost of debt (interest rate on loan borrowed) is used as the discounting rate.

Factors That Influence the Cost of Finance

1. Terms of reference – if short term, the cost is usually low and vice versa.
2. Economic conditions prevailing – If a company is operating under inflationary conditions, such a company will pay high costs in so far as inflationary effect of finance will be passed onto the company.
3. Risk exposed to venture – if a company is operating under high risk conditions, such a company will pay high costs to induce lenders to avail finance to it because the element of risk will be added on the cost of finance which may compound it.
4. Size of the business – A small company will find it difficult to raise finance and as such will pay heavily in form of cost of finance to obtain debt from lenders.
5. Availability – Cost of finance (COF) prices will also be influenced by the forces of demand and supply such that low demand and low supply will lead to high cost of finance.
6. Effects of taxation – Debt finance is cheaper by the amount equal to tax on interest and this means that debt finance will entail a saving in cost of finance equivalent to tax on interest.
7. Nature of security – If security given depreciates fast, then this will compound implicit costs (costs of maintaining that security).
8. Company"s growth stage – Young companies usually pay less dividends in which case the cost of this finance will be relatively cheaper at the earlier stages of the company"s development.

Term Structure of Interest Rates

The term structure of interest rate describes the relationship between interest rates and the term to maturity and the differences between short term and long term interest rates.

The relationship between short and long interest rates is important to corporate managers because:

1. They must decide whether to buy long term or short term bonds and whether to borrow by issuing long-term or short-term bonds.
2. It enables them to understand how long term and short term rates are related and what causes the shift in their relative positions.

Several theories had been advanced to explain the nature of yield curve – These are:

1. Liquidity preference theory
2. Expectation theory
3. Market segmentation theory

1. Liquidity Preference Theory

This theory states that short term bonds are more favourable than long term bonds for 2 reasons.

i) Investors generally prefer short term bonds to long-term securities because such securities are more liquid in the sense that they can be converted to cash with little danger of loss of principal. Therefore – investors will accept lower yields on short term securities.

ii) At the same time borrowers react in exactly the opposite way.
Generally borrowers prefer long term debt because short-term debt exposes them to the risk of having to repay the debt under adverse. Conditions, accordingly borrowers are willing to pay higher rate other things held constant for long-term process than short ones.

Taking together this two sets of preferences implies that under normal conditions, a positive maturity risk premium exist which increases with maturity thus the yield curve should be upward sloping. Lenders prefer liquidity (short term hands) while borrowers prefer long term bonds and are willing to pay a "premium" for long term borrowing.

2. Expectation Theory

This theory states that the yield curve depends on the expectation about future inflation rates. If inflation rate is expected to increase, then the rate on long-term bonds will exceed that of short-term loan. The expected future interest rates are equal to forward rates computed from the expectations with regard to future interest rates are. Other factors which affect the expectations with regard to future interest rates are:

- Political stability
- Monetary policy of the government
- Fiscal policy of the government (government expedition)
- Other economic related factors including social factors.

The following conditions are necessary for the expectation theory to hold.

i) Perfect capital markets exists where there are many buyers and sellers of security with non having a significant influence on the interest rates.
ii) Investors have homogeneous expectations about future interest rates and returns on all investments.
iii) Investors are rational wealth maximizers
iv) Bankruptcy of firms due to use of borrowing is unlikely.

3. Market Segmentation Theory

This theory states that the major investors (borrowers and lenders) are confined to a particular segment of the market and will not change even if the forecast of the likely future interest rates changes.

The lenders and borrower thus have a preferred maturity e.g a person borrowing to buy a house or a company borrowing to build a power plant would want a long term loan. However a retailer borrowing to build up stock in readiness for a peak reason would prefer a short term loan. Similar differences exist among savers e.g a person saving to pay school fees for next semester would want to lend on in the short-term market. A person saving for retirement 20 years ahead would probably buy long-term security in L.T market.

The thrust of market segmentation theory is that the slope of yield curve depends on demand and supply mechanism. An upward sloping curve would occur if there was a large supply of funds relative to demand in the short term marketing but a relative shortage of funds in the long-term market would produce an upward sloping curve.

Tests of the 3 theories

Various test have been conducted mainly in USA and they indicate that all the 3 theories have some validity and thus the shape of the yield curve of any firm is affected by the following:

1. Supply and demand conditions in the short and long term market.
2. Liquidity preferences of lenders and borrowers
3. Expectation of future inflation. While any of the 3 factors may dominate the market all the 3 effect the term structure of interest rate.

Factors influencing interest rates

There are four most important factors that influence interest rates and the shape of yield curve.

1. CBK – Monetary policy
2. The level of government budget deficit
3. Balance of trade position
4. Business activity (circle) in the economy

1. CBK – Monetary Policy

The money supply in the economy has a major effect on both the level of economic activity and the rate of inflation. The level of money supply is controlled by the CBK.

If the CBK wants to stimulate the economy, it increases the money supply. The initial effect of such an action is to cause interest rates to decline but this may also lead to increase in expected rate of inflation which in turn pushes the interest rates up in the long run. The reverse of this would happen if the CBK tightens the money supply in the economy.

Note

During periods when CBK is directly interfering with the market, the yield curve will be distorted. S.T interests will be too high if the banks are tightening their credit and they could be too low if the banks are easing the credit.

2. Government Budget Deficit

If the Government spends more than it takes in from tax revenue, it runs a budget deficit. This deficit must be covered or financed either by borrowing or printing more money. The Kenya Government has in the past used the two ways of financing its deficit in a balanced manner. The effect in interest rates is whether the deficit is financed through printing or borrowing. The Government would borrow in the S.T market which increase the demand of available funds for lending which subsequently pushes the interest rates up.

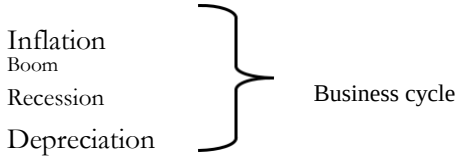
If the Government prints more money this will lead to inflation and the interest rate would eventually rise. Therefore the larger the Government deficit, the higher the level of interest rates.

3. Foreign Trade Balance

If the Government buys (imports) more than it sells (exports) there will be a trade deficit which will require financing. The main source of financing could be debt. This Government would once again go into the market and borrow and cause an upward pressure on funds available for lending.

This causes the interest rates to go up. If there was a favourable balance of trade the Government could not borrow and the interest rates could remain relatively stable.

4. Business activity cycle



The interest rates also depends on business cycles (as above). As the economy moves in the four (4) business cycles, interest rates will shift as well e.g during economic recessions, short-term interest rates experience sharp decline than L.T interest rates. This is because of the following reasons:

The CBK operates mainly in the S.T Sector (market) and its intervention has a major effect on S.T interest rates.

ii) L.T interest rates generally reflect the average expected inflation rate over the next 10 – 20 years.

These expectations do not change generally because L.T interest rates are fixed due to debt covenants entered into during borrowing time.

Other Determinants of Market Interest Rates (Required Rate of Return)

5. Risk free rate – This is the interest rate that would exist on default free securities such as Treasury bills and bonds.

   Risk free rate is made up of two components:

   - Real rate of return – interest rate if there was no inflation

- Inflation premium

Therefore risk free rate (RF) = Real rate of return + Inflation premium.

If risk premium is added to risk free rate, required rate of return is derived. Therefore required rate of return = real rate + inflation + premium + risk premium = Risk free rate + Risk premium.

6. Inflation premium – Investors are compensated for reduction in purchasing power of money. From point (1) the higher the inflation premium, the higher the market interest rate.
7. Default risk premium (DRP)
   This is the rate added to risk free rate for possibility of default in payment of loans. Usually, its added if two securities have equal maturity and marketability.
8. Liquidity premium – This is premium added to equilibrium interest rate on a security if that security cannot be converted to cash on short notice and close to the original cost.
9. Maturity Risk Premium – a premium reflecting interest rate risk i.e risk of capital losses which investors are exposed to because of hanging interest rate over time.

INTEREST RATE LEVELS AND STOCK PRICES

Interest rates have two effects on corporate profits:

a) Because interest rate is a cost, the higher the rate of interest the lower the firm"s profit other things held constant.
b) Interest rates affect the level of economic activities which affect the level of corporate profit.

Interest rates obviously affect stock prices because of the effect on profit but even more importantly they have an effect due to the competition in the market between shares and bonds.

If interest rates rise sharply, investors can get higher returns in the bond (money) market which induces them to sell shares (stocks) and transfer the funds from stock market to money market (Treasury bills).

Such transfers in response to increase in interest rates reduces demand for shares in the stock exchange and this obviously depresses the share prices e.g in mid and late 1993 the CBK intervened in the short term market where it floated Treasury Bills whose interest rate was as high as 88% well above the returns that can be expected from high yield stocks.

Accordingly, investors removed (misdirected) their money (funds) from the stock market into Treasury Bills. The result was a stagnation of stock prices of quoted firms. Accordingly as CBK achieved its objective of reducing the money supply in the economy the interest rates declined well below 30% and the immediate effect was a rebuild in demand for shares and the share prices shot up instantaneously around February 1994.

Importance of Interest Rates

These are of a particular relevance to a finance manager because:

i) They measure the cost of borrowing.

ii) Interest rates in a country influence the foreign exchange rate of the country"s currency.
iii) Interest rates act as a guide to the sort of return that firm"s shareholders might want hence changes in interest rates will affect rates for an approved creditworthy borrower.

Interest may be

a) Base lending rates – Banks lend to individual and small firm"s at certain margins above the base lending rates. It is therefore the rates for an approved creditworthy borrower.
b) Inter-Bank Lending rates
For large loans to big firms, banks will set interest rates at a margin below base rates rather than above base lending rates.

The Treasury Bills Rates – Risk Free

- The rates at much central bank sells treasury bills to the market.
- Treasury bills are used to raise, short-term funds for the government. Securities issued by the government to raise long term funds are called gilt-edged securities.
- Why interest rates differ in different markets segments

Interest rates may differ in different market and market segment because of:

i) Size of the loan: Deposits above certain amounts into the bank might attract higher interest rates than smaller deposits. Consequently, large borrowers would be charged higher interest rates than small borrowers.
ii) Risks: Higher risk borrowers must pay higher rates on their borrowing to compensate lenders for greater risks involved.
iii) The need to make a profit in re-lending: e.g banks borrow for depositors and charge higher interest (profit margin) when they lend to borrowers.
iv) Duration of the lending
The L.T. loans will earn a higher rate of interest than shorter term loans due to the maturity risk premium.
v) International interest rates: This vary from one country to another due to differing rates of inflation and government policies on interest rates and foreign currency exchange rates.
vi) Different types of financial assets:
Building societies must offer higher yields to depositors to attract them using bonds which have high rate of return.

METHODS/MODELS OF COMPUTING COST OF CAPITAL

The following models are used to establish the various costs of capital or required rate of return by the investors:

- Risk adjusted discounting rate
- Market model/investors expected yield
- Capital asset pricing model (CAPM)
- Dividend yield/Gordon"s model.

i) **Risk adjusted discounting rate** – This technique is used to establish the discounting rate to be used for a given project. The cost of capital of the firm will be used as the discounting rate for a given project if project risk is equal to business risk of the firm. If a project has a higher risk than the business risk of the firm, then a percentage risk premium is added to the cost of capital to determine the discounting rate i.e. discounting rate for a high risk project = cost of capital + percentage risk premium. Therefore a high risk project will be evaluated at a higher discounting rate.

ii) **Market Model** – This model is used to establish the percentage cost of ordinary share capital cost of equity (K_e). If an investor is holding ordinary shares, he can receive returns in 2 forms:

- Dividends
- Capital gains

Capital gain is assumed to constitute the difference between the buying price of a share at the beginning of the (P_0), the selling price of the same share at the end of the period (P_1). Therefore total returns = DPS + Capital gains = DPS + $P_1 – P_0$.
The amount invested to derive the returns is equal to the buying price at the beginning of the period (P_0) therefore percentage return/yield =

$$\frac{\text{Total returns x 100}}{\text{Investment}} = \text{DPS} + \frac{P_1 - P_0}{P_0} \times 100$$

Illustration:

For the past 5 years, the MPS and DPS for XYZ Ltd were as follows:

	1998 Shs.	1999 Shs.	2000 Shs.	2001 Shs.	2002 Shs.
MPS as at 31st Dec	40	45	53	50	52
DPS for the year	-	3	4	3	-

Required

Determine the estimated cost of equity/shareholders percentage yield for each of the years involved.

Solution

Year	MPS	Capital gain	DPS	% Return
1998	40	-	-	-
1999	45	5	3	$\frac{5+3}{40} \times 100 = \frac{8}{40} \times 100 = 20\%$
2000	53	8	4	$\frac{8+4}{45} = \frac{12}{45} \times 100 = 27\%$
2001	50	-3	3	$\frac{-3+3}{53} = \frac{0}{53} \times 100 = 0\%$

2002	52	2	-	$\frac{2+0}{50} = \frac{2}{50} \times 100 = 4\%$

iii) **Capital asset pricing model (CAPM)** – CAPM is a technique that is used to establish the required rate of return of an investment given a particular level of risk. According to CAPM, the total business risk of the firm can be divided into 2:

Systematic Risk – This is the risk that affects all the firms in the market. This risk cannot be eliminated/diversified. It is thus called undiversifiable risk. Since it affects all the firms in the market, the share price and profitability of the firms will be moving in the same direction i.e. systematically. Examples of systematic risk are political instability, inflation, power crisis in the economy, power rationing, natural calamities – floods and earthquakes, increase in corporate tax rates and personal tax rates, etc. Systematic risk is measured by a Beta factor.

Unsystematic risk – This risk affects only one firm in the market but not other firms. It is therefore unique to the firm thus unsystematic trend in profitability of the firm relative to the profitability trend of other firms in the market. The risk is caused by factors unique to the firm such as:

- Labour strikes by employees of the firm;
- Exit of a prominent corporate personality;
- Collapse of marketing and advertising programs of the firm on launching of a new product;
- Failure to make a research and development breakthrough by the firm, etc

CAPM is only concerned with systematic risk. According to the model, the required rate of return will be highly influenced by the Beta factor of each investment. This is in addition to the excess returns an investor derives by undertaking additional risk e.g cost of equity should be equal to $R_f + (R_m - R_f)B_E$

Cost of debt = $R_f + (R_m - R_f)B_d$

Where: R_f = rate of return/interest rate on riskless investment e.g T. bills
R_m = Average rate of return for the entire stock as shown by average Percentage return of the firms that constitute the stock index.
B_e = Beta factor of investment in ordinary shares/equity.
B_d = Beta factor for investment in debentures/long term debt capital.

Illustration

KK Ltd is an all equity firm whose Beta factor is 1.2, the interest rate on T. bills is currently at 8.5% and the market rate of return is 14.5%. Determine the cost of equity K_e, for the company.

Solution

$R_f = 8.5\%$ $R_m = 14.5\%$ Beta of equity = 1.2

$K_e = R_f + (R_m - R_f)B_E$
$= 8.5\% + (14.5\% - 8.5\%)\ 1.2$

= 8.5% + (6%)1.2
= 15.7%

iv) **Dividend yield/Gordon's Model** – This model is used to determine the cost of various capital components in particular:

- Cost of equity - K_e
- Cost of preference share capital (perpetual) – K_p
- Cost of perpetual debentures – K_d

a) Cost of equity (K_e)– This can be determined with respect to:

Zero growth firm – $P_0 = d_0$ Therefore = $\frac{d_0}{P_0}$

$R = K_e$

Where: d_0 = DPS
R_0 = Current MPS

Constant growth firm – $P_0 = \frac{d_0(1+g)}{Keg}$

Therefore $Ke = \frac{d_0(1+g)}{P_0} + g$

b) Cost of perpetual preference share capital (Kp)

Recall, value of a preference share (FRS) = $\frac{\text{Constant DPS}}{Kp}$

Therefore: d_p = Preference dividend per share
P_p = Market price of a preference share

c) Cost of perpetual debenture (K_d) – Debentures pay interest charges, which an allowable expenses for tax purposes.

Recall, Value of a debenture (V_d) = $\frac{\text{Interest charges p.a. in } \infty}{\text{Cost of debt } K_d}$

Therefore $K_d = \frac{Int.}{V_d}(1-T)$

Where: K_d = % cost of debt
T = Corporate tax rate
V_d = Market value of a debenture

Cost of Redeemable Debentures and Preference Shares

Redeemable fixed return securities have a definite maturity period. The cost of such securities is called yield to maturity (YTM) or redemption yield (RY). For a redeemable debenture K_d (cost of debt) = YTM = RY, can be determined using approximation method as follows:

$$K_d / YTM / RY = \frac{Int(1-T) + (M - V_d)n^{-1}}{(M + V_d)^{-1}_2}$$

Where: Int. = Interest charges p.a.
T = Corporate tax rate
M = Par or maturity value of a debenture
V_d = Current market value of a debenture
n = Number of years to maturity

WEIGHTED AVERAGE COST OF CAPITAL (W.A.C.C.)

This is also called the overall or composite cost of capital. Since various capital components have different percentage cost, it is important to determine a single average cost of capital attributable to various costs of capital. This is determined on the basis of percentage cost of each capital component.

Market value weight or proportion of each capital component.

$$W.A.C.C = K_e\left(\frac{E}{V}\right) + K_p\left(\frac{P}{V}\right) + K_d(1-T)\left(\frac{D}{V}\right)$$

Where: K_e, K_p and K_d = Percentage cost of equity, preference share capital and debt capital respectively

E, P and D = Market value of equity, preference share capital and debt capital respectively.

NB: Market value = Market price of a security x No. of securities.

V = Total market value of the firm = E + P + D.

Illustration

The following is the capital structure of XYZ Ltd as at 31/12/2002.

Shs.M

Ordinary share capital Sh.10 par value	400
Retained earnings	200
10% preference share capital Sh.20 par value	100
12% debenture Sh.100 par value	200
	900

Additional information

1. Corporate tax rate is 30%
2. Preference shares were issued 10 years ago and are still selling at par value MPS = Par value
3. The debenture has a 10 year maturity period. It is currently selling at Sh.90 in the market.
4. Currently the firm has been paying dividend per share of Sh.5. The DPS is expected to grow at 5% p.a. in future. The current MPS is Sh.40.

Required

a) Determine the WACC of the firm.
b) Explain why market values and not book values are used to determine the weights.
c) What are the weaknesses associated with WACC when used as the discounting rate, in project appraisal.

a) i)Compute the cost of each capital component

Cost of equity (K_e) – Since the growth rate in dividends is given, use the constant growth rate dividend model to determine the cost of equity.

d_0 = Sh.5 P_0 = Sh.40 g = 5%

$$Ke = \frac{d_0(1+g)}{P_0 40} + g = \frac{5(1+0.05)}{} + 0.05 = 0.18125 = 18.13\%$$

Cost of perpetual preference share capital (K_p) – preference shares are still selling at par thus MPS = par value. If this is the case, K_p = coupon rate = 10%.

MPS = Par value = Sh.20

Dp = 10% x Sh.20 = Sh.2

$$Kp = \frac{DPS}{MPS} = \frac{d_p}{Pp} = \frac{Sh.2}{Sh.20} = 10\%$$

Cost of debentures (K_d) – the debenture has a 10 year maturity period. It is thus a redeemable fixed return security thus the cost of debt is equal to yield to maturity.

Redemption yield:

Interest charges p.a. = 12% x Sh.100 par value	= Sh.12
Maturity period (n)	= 10 years
Maturity value (m)	= Sh.100

Current market value (Vd) = Sh.90
Corporate tax rate (T) = 30%

$$K_d = YTM = RY = \frac{Int(1-T)+(M-V_d)\frac{1}{n}}{(M+V_d)½}$$

$$= \frac{Sh.12(1-0.3)+(100-90)\frac{1}{10}}{(100+90)½} = 9.9\% \approx 10\%$$

ii) Compute the market value of each capital component

Market value of Equity (E) = MPS x No. of ordinary shares

$$= Sh.40 \times \frac{Sh.400MDSC}{Sh.10 par\ value} = 1{,}600$$

Market value of preference share capital (P)

= Par value, since MPS = Par value per share = 100

Market value of debt (D) = Vd x No. of debentures

$$= Sh.90 \times \frac{Sh.200Mdebentures}{Sh.100 par\ value} = \underline{\underline{180}}$$

E + P + D = V = total Market Value = 1,880

iii) Compute W.A.C.C using K_e = 18.13%, K_p = 10%, $K_d(1-T)$ = 10%

a) Using weighted average cost method,, WACC =

$$= K_e\left(\frac{E}{V}\right) + K_p\left(\frac{P}{V}\right) + K_d(1-T)\left(\frac{D}{V}\right)$$

$$= 18.13\%\left(\frac{1{,}600}{1{,}880}\right) + 10\%\left(\frac{100}{1{,}880}\right) + 10\%\left(\frac{180}{1{,}880}\right)$$

$$= 15.43 + 0.5319 + 0.9574$$

$$= 0.169193$$

$$\approx 16.92\%$$

b) By using percentage method,

$$WACC = \frac{\text{Total monetary cost}}{\text{Total market value (V)}}$$

Where: Monetary cost = % cost x market value of capital

Monetary cost of E	=	18.13% x 1,600	=	290.08
Monetary cost of P	=	10% x 100	=	10.00
Monetary cost of D	=	10% x 180	=	18.00
				318.08

Total market value (V)	1,880

Therefore WACC = $\frac{318.08}{1,880}$ x100 = 16.92%

b) In computation of the weights or proportions of various capital components, the following values may be used:

- Market values
- Book values
- Replacement values
- Intrinsic values

Market Value – This involves determining the weights or proportions using the current market values of the various capital components. The problems with the use of market values are:

The market value of each security keep on changing on daily basis thus market values can be computed only at one point in time.

The market value of each security may be incorrect due to cases of over or under valuation in the market.

Book values – This involves the use of the par value of capital as shown in the balance sheet. The main problem with book values is that they are historical/past values indicating the value of a security when it was originally sold in the market for the first time.

Replacement values – This involves determining the weights or proportions on the basis of amount that can be paid to replace the existing assets. The problem with replacement values is that assets can never be replaced at ago and replacement values may not be objectively determined.

Intrinsic values – In this case the weights are determine on the basis of the real/intrinsic value of a given security. Intrinsic values may not be accurate since they are computed using historical/past information and are usually estimates.

e) Weaknesses of WACC as a discounting rate

WACC/Overall cost of capital has the following problems as a discounting rate:

- It can only be used as a discounting rate assuming that the risk of the project is equal to the business risk of the firm. If the project has higher risk then a percentage premium will be added to WACC to determine the appropriate discounting rate.
- It assumes that capital structure is optimal which is not achievable in real world.
- It is based on market values of capital which keep on changing thus WACC will change over time but is assumed to remain constant throughout the economic life of the project.
- It is based on past information especially when determining the cost of each component e.g in determining the cost of equity (Ke) the past year"s DPS is used while the growth rate is estimated from the past stream of dividends.

Note

When using market values to determine the weight/proportion in WACC, the cost of retained earnings is left out since it is already included or reflected in the MPS and thus the market value of equity. Retained earnings are an internal source of finance thus, when they are high there is low gearing, lower financial risk and thus highest MPS.

Marginal cost of finance

This is cost of new finances or additional cost a company has to pay to raise and use additional finance
is given by:

Total cost of marginal finance x 100
Cost of finance (COF)

Cost of finance may be computed using the following information:

i) Marginal cost of each capital component.
ii) The weights based on the amount to raise from each source.

a) Investors usually compute their return basing their figures on market values or cost of investment.
b) Investors purchase their investment at market value and as such, the cost of finance to the company must be weighted against expectations based on the market conditions.
c) Investments appreciate in the stock market and as such the cost must be adjusted to reflect such a movement in the value of an investment.

1. Marginal cost of equity

$$MCE = \frac{D_1}{P_o - f} x100 \quad \text{(for zero growth firm)}$$

Also cost of equity

$$K_e = \frac{D_1}{P_o - f} \quad \text{(for normal growth firm)}$$

Where: d_1 = expected DPS = $d_0(1+g)$
P_0 = current MPS
f = floation costs
g = growth rate in equity

2. Cost of preference share capital:

$$Kp = \frac{Dp}{Po - f} x100$$

Where: K_p = Cost of preference
D_p = Dividend per share
P_o = MPS (Market price per share)
F = Flotation costs

3. Cost of debenture

$$Kd = \frac{Int(1- T)}{Vd - f}$$

Where: K_d = Cost of debt
Int = interest
P_o = Market price for debenture (at discount)
f = flotation costs
t = Tax rate

4. Just like WACC, weighted marginal cost of capital can be computed using:

   i) Weighted average cost method

   ii) Percentage method

Example

XYZ Ltd wants to raise new capital to finance a new project. The firm will issue 200,000 ordinary shares (Sh.10 par value) at Sh.16 with Sh.1 floatation costs per share, 75,000 12% preference shares (Sh.20 par value) at Sh.18 with sh.150,000 total floatation costs, 50,000 18% debentures (sh.100 par) at Sh.80 and raised a Sh.5,000,000 18% loan paying total floatation costs of Sh.200,000. Assume 30% corporate tax rate. The company paid 28% ordinary dividends which is expected to grow at 4% p.a.

Required

a) Determine the total capital to raise net of floatation costs
b) Compute the marginal cost of capital

Solution

a)		Sh."000"
Ordinary shares 200,000 shares @ Sh.16	3,200,000	
Less floatation costs 200,000 shares @ Sh.1	200,000	3,000
	1,350,000	
Preference shares 75,000 shares @ Sh.18	(150,000)	1,200
Less floatation cost	3,000,000	
Debentures 50,000 debentures @ Sh.80	-	3,000
Floatation costs	5,000,000	
Loan	(200,000)	4,800
Less floatation costs		12,000
Total capital raised		

b) Marginal cost of equity Ke

$$Ke \frac{d_0 (1+g)}{g P_0 - f} +$$

d_0 = 28% x Sh.10 par = Sh.2.80
g = 4%
f = Sh.1.00
P_0 = Sh.16

Therefore marginal = $Ke = \frac{2.80(1.04)}{16-1} + 0.04 = 0.234$ = 23.4%

Marginal cost of preference share capital Kp

$$Kp = \frac{d_p}{P_0 - f}$$

d_p = 12% x Sh.20 par = Sh.2.40
P_0 = Sh.18
f = Floatation cost per share = Sh.150,000 / 75,000 shares = Sh.2.00

$$Kp = \frac{2.40}{18-2} = 0.15 = 15\%$$

Marginal cost of debenture K_d:

$$K_d = \frac{Int}{V_d - f}(1-t)$$

f = 0
V_d = Sh.80
Int = 18% x Sh.100 par = Sh.18
T = 30%

$$K_d = \frac{18}{80}(1-0.3) = 0.1575 = 15.75\%$$

Marginal cost of loan K_d

$$Kd = \frac{Int}{V_d - f}(1-t)$$

T = 30%
V_d = Sh.5 million
f = Sh.0.2 million
Int = 18% x Sh.5M = Sh.0.9M

$$K_d = \frac{0.9}{5-0.2}(1-0.3) = 0.13125 = 13.13\%$$

Source	Amount to raise before f. costs Sh."000"	% marginal cost	Maturity cost Sh."000"
Ordinary shares	3,200	23.4%	748.8

Preference shares	1,350	15.0%	203.5
Debenture	3,000	15.75%	472.5
Loan	5,000	13.13%	656.5
	12,550		2,080.3

$$\text{Weighted marginal cost} = \frac{2{,}080.3}{12{,}550} \times 100 = 16.58\%$$

REINFORCING QUESTIONS

QUESTION ONE

The following is the existing capital structure of Company XYZ Ltd.

	Shs.
Ordinary shares at Shs.10 par	1,000,000
Retained	800,000
12% preference shares Shs.10 par	400,000
16% loan Shs.100 par	300,000
Total capital employed	2,500,000

The company"s ordinary shares have a dividend cover of 3 times and pays a dividend of 10% on its ordinary share capital.

Ordinary shares sells at Shs.18
Preference shares sell at Shs.15
Debentures are selling at par. The tax rate is 30%

Compute

a) Growth in Equity. (10 marks)
b) W.A.C.C. (10 marks)

QUESTION TWO

Distinguish between

- Capital structure and financial structure.
- Distinguish between Business risk and Financial risk.
- What is the effect of introduction of debt capital on weighted average cost of capital (WACC)
- Differentiate between marginal weighted cost of capital (MWCC) and WACC

QUESTION THREE

a) Define the term weighted average cost of capital. (3 marks)
b) What is meant by the marginal weighted average cost of capital? (3 marks)
c) Com-Tech Company Ltd. is in the Telecommunications Industry. The company"s balance sheet as at 31 March 2000 is as below:

Liability and Owners Equity	**Sh.'000'**	**Assets**	**Sh.'000'**
Current liabilities	12,500	Current assets	32,500
18% debentures (sh.1,000 par)	16,000	Net fixed assets	42,875
10% preference shares	6,250		
Ordinary shares (Sh.10 par)	12,500		
Retained earnings	28,125		
	75,375		75,375

Additional information

The debentures are now selling at Sh.950 in the market and will be redeemed 10 years from now. By the end of last financial period, the company had declared and paid Sh.5.00 as dividend per share. The dividends are expected to grow at an annual rate of 10% in the foreseeable future. Currently, the company"s shares are trading at Sh.38 per share at the local stock exchange.
The preference shares were floated in 1995 and their prices have remained constant.
Most banks are lending money at an interest of 22% per annum.
The Corporation tax rate is 40% per annum.

Required

i) Calculate the market weighted cost of capital for this firm. (12 marks)
ii) "The book-value weights should be used discreetly when computing weighted cost of capital". Why" (2 marks)

QUESTION FOUR

Assume that on 31 December 2001 you are provided with the following capital structure of Hatilcure Ltd which is optimal.

	Sh."000"
Long term debt (16%)	135,000
Ordinary share capital (Sh.10 par)	90,000
Retained earnings	75,000
	300,000

The company has total assets amounting to sh.360 million but this figure is expected to rise to Sh.500 million by he end of 2002. You are also informed that:

1. Any new equity shares sold will net 90% after flotation costs.
2. For the year just ended the company paid Sh.3.00 in dividends per share.
3. New 16% debt can be raised at par through the stock exchange.
4. The past and expected earnings growth rate is 10%
5. The current dividend yield is 12%
6. The company"s dividend payout ratio of 50% shall be maintained in 2002.
7. Assume marginal at rate of 40%
8. The company"s capital structure is optimal

Required

a) Company"s net amount to the capital budget to be financial with equity if 85% of the asset expansion is included in the 2002 capital budget. (3 marks)
b) How many shares must be sold to raise the required equity capital? Round your figure o the nearest thousand. (8 marks)
c) What is the firm"s marginal cost of capital? Show full workings. (10 marks)

CHECK YOUR ANSWERS WITH THOSE GIVEN IN LESSON 10 OF THE STUDY PACK

COMPREHENSIVE ASSIGNMENT 2

TO BE SUBMITTED AFTER LESSON 4

To Be Carried Out Under Examination Condition and Sent to Distance learning Administrator for marking by the University

Answer All Questions **Time Allowed: Three Hours**

QUESTION ONE

a) How can the action of shareholders reduce the value of the bond held by debenture holders? (10 marks)

b) State and explain the mechanism of resolving the agency problem between shareholders and debenture holders. (10 marks)

QUESTION TWO

a) Explain the term „gearing" in relation to the capital structure of a limited liability company. (4 marks)

b) Ayet Ltd. and Bayet Ltd. are two small size companies operating in Mombasa, Kenya. The following information has been provided for the year ended 30 April 1998:

	Ayet Ltd. Shs.	Bayet Ltd. Shs.
Ordinary share capital Sh.10 par	600,000	1,800,000
10% preference shares of Sh.10 par	600,000	-
	1,200,000	1,800,000
Retained profits	800,000	1,200,000
	2,000,000	3,000,000
15% Debentures	2,000,000	1,000,000
Capital employed	4,000,000	4,000,000

Required

Calculate the gearing ratio of each company and state in each case whether the gearing is high or low. (Calculate to 2 decimal places). (6 marks)

Calculate the maximum percentage dividend on ordinary shares which each company could declare, without utilizing, or adding to, accumulated retained profits if profits for the year ended 30 April 1998 was:

	Ayet Ltd. Shs.	Bayet Ltd. Shs.
Net profit (before Interest and tax)	500,000	1,000,000

(Corporation tax rate is 40%)

(6 marks)

Comment on the results of b(ii) above. (2 marks)

QUESTIONTHREE

The following information is provided in respect to the affairs of Pote Limited which prepares its account on the calendar year basis.

	1995 Shs.	1994 Shs.
Sales	600,000	500,000
Purchases	400,000	350,000
Cost of goods sold	360,000	330,000
Stock at 31 December	100,000	60,000
Debtors at 31 December	98,000	102,000
Creditors at 31 December	40,000	25,000
Total assets at 31 December	300,000	185,000

Stock and debtors at 1 January 1994 amounted to Sh.70,000 and Sh.98,000 respectively.

Required

a) Calculate the rate of stock turnover expressed:

i) As a ratio; (3 marks)
ii) In days, for each of the years 1994 and 1995. (3 marks)

b) Calculate the rate of collection of debtors, in days, for each of the years 1994 and 1995. (3 marks)

c) Calculate the rate of payment to creditors, in days, for each year 1994 and 1995. (3 marks)

d) Show the cash operating cycle for each year. (6 marks)

e) Comment on the results. (6 marks)

QUESTION FOUR

a) Briefly explain the meaning of a "floating rate" bond. (4 marks)
b) From the point of view of a company"s financial manager, outline the merits and demerits, to the company, of issuing floating rate debt as a means of raising capital. (16 marks)

QUESTION FIVE

The Altman formula for prediction of bankruptcy is given as follows:

Z score = $1.2X_1 + 1.4X_2 + 3.3X_3 + 1X_4 + 0.6X_5$

Where: X_1 = Working capital/Total assets
X_2 = Retained earnings/Total assets
X_3 = Earnings before interest and tax/Total assets
X_4 = Sales/Total assets
X_5 = Market value of Equity/Liabilities

In this model, a Z-score of 2.7 or more indicates non-failure and a Z-score of 1.8 or less indicates failure.

You are provided with the following information in respect of four listed companies.

	Working capital	**Retained earnings**	**Earnings before interest and tax**	**Market value of equity**	**Total assets**	**Liabilities**	**Sales**
	Sh.'000'	**Sh.'000'**	**Sh.'000'**	**Sh.'000'**	**Sh.'000'**	**Sh.'000'**	**Sh.'000'**
A	4,000	60,000	10,000	20,000		120,000	
Ltd	2,000	20,000	0	5,000	200,000	80,000	200,000
B	6,000	20,000	-30,000	48,000		740,000	
Ltd	40,000	200,000	30,000	100,000	100,000	1,000,000	120,000
C							
Ltd					800,000		900,000
D					1,800,000		2,000,000
Ltd.							

Required

a) The Z-Score for each of the companies. Comment on the results obtained. (10 marks)
b) It has been suggested that other ratios ought to be incorporated into Altman"s bankruptcy prediction model. What is your opinion on this? (5 marks)
c) List the indicators of possible business failure. (5 marks)

END OF COMPREHENSIVE ASSIGNMENT NO.2
NOW SEND TO DISTANCE LEARNING FOR MARKING

LESSON FIVE

CAPITAL INVESTMENT DECISIONS

INSTRUCTIONS

- Read Chapters 7, 11 and 12 of Financial Management text book by I.M. Pandey
- Complete answers to **reinforcement** questions at the end of the lesson.
- Check model answers given in lesson 10 of the study pack.
- Reinforcing Comments

CONTENTS

- Importance of investment analysis
- Methods of analysing /evaluating projects
- Comparisons of the Methods
- Replacement of Assets

INVESTMENT ANALYSIS

Any company will invest finance for the sake of deriving a return which is useful for four main reasons:

1. To reward the shareholders or owners of the business for staking their money and by foregoing their current purchasing power for the sake of current and future return.
2. To reward creditors by paying them regular return in form of interest and repayment of their principal as and when it falls due.
3. To be able to retain part of their earnings for plough back purposes which facilitates not only the companies growth present and the future but also has the implication of increasing the size of the company in sales and in assets.
4. For the increase in share prices and thus the credibility of the company and its ability to raise further finance.
   Such a return is necessary to keep the company"s operations moving smoothly and thus allow the above objective to be achieved.

A financial manager with present investment policies will be concerned with how efficiently the company"s funds are invested because it is from such investment that the company will survive. Investments are important because:

i) They influence company"s size
ii) Influence growth
iii) Influence company"s risks

In addition, this investment decision making process also known as capital budgeting, involves the decision to invest the company"s current funds in viable ventures whose returns will be realised for long term periods in future. Capital budgeting as financial planning is characterised by the following:

1. Decisions of this nature are long term i.e. extending beyond one year in which case they are also expected to generate returns of long term in nature.
2. Investment is usually heavy (heavy capital injection) and as such has to be properly planned.
3. These decisions are irreversible and any mistake may cause the company heavy losses.

Importance of Investment Decisions

a) Such decisions are importance because they will influence the company"s size (fixed assets, sales, and retained earnings).
b) They increase the value of the company"s shares and thus its credibility.
c) The fact that they are irreversible means that they have to be made carefully to avoid any mistake which can lead to the failure of such investment.
d) Due to heavy capital outlay, more attention is required to avoid loss of huge sums of money which in the extreme may lead to the closure of such a company. However, these decisions are influenced by:

i) Political factors – Under conditions of political uncertainty, such decisions cannot be made as it will entail an element of risk of failure of such investment. Thus political

certainty has to be analysed before such decisions are made, such factors must be taken into account such that the company forecasts the inflows and outflows within given limitations such as the degree of competition, performance of economy, changing tastes etc. which influence ability to generate sufficient return from a venture which will pay not only interest but principal on such funds invested.

ii) **Technological factors** – These influence the returns of the company because such technology will affect the company"s ability to utilise its assets to the utmost ability in particular if such assets become obsolete and cannot generate good returns or the output of such machines may be low with time and may not meet planned expectations which in most cases will have an impact on inflows from a venture.

Methods of Analyzing Investment

Capital Budgeting Methods.

There are two methods of analyzing the viability of an investment:

a) Traditional methods

- Pay back period method
- Accounting rate of return method

b) Modern methods (Discounted cash flow techniques)

- NPV – Net present value method
- IRR – Internal rate of return method
- PI – Profitability index method

For the above two (a & b) methods to be used, they have to meet the following:

i) They should rank ventures available in the investment market according to their viability i.e. they should identify which method is more viable than others.
ii) They should rank a venture first if the venture brings in return earlier and in large lumpsums than if a venture brought in late and less inflows over the same period.
iii) Should rank any other projects as and when it is available in the investment market. Such methods should take into account that all returns (inflows), must be cash returns as it is necessary to be able to finance the cost of the venture.

TRADITIONAL METHODS

Pay back period method

This method gauges the viability of a venture by taking the inflows and outflows over time to ascertain how soon a venture can payback and for this reason PBP (or payout period or payoff) *is that period of time or duration it will take an investment venture to generate sufficient cash inflows to payback the cost of such investment*. This is a popular approach among the traditional financial managers because it helps them ascertain the time it will take to recoup in form of cash from operations the original cost of the venture. This method is usually an important preliminary screening stage of the viability of the venture and it may yield clues to profitability although in principle it will measure how fast a venture may payback rather than how much a venture will generate in profits and yet the main objectives of an investment is not to recoup the original cost but also to earn a profit for the owners or investors.

Computation of payback period:

1. **Under uniform annual incremental cash inflows** – if the venture or an asset generates uniform cash inflows then the payback period (PBP) will be given by:

$$PBP = \frac{\text{Initial cost of the venture}}{\text{Annual incremental cost}}$$

e.g. If a venture costs 37,910/= and promises returns of 10,000/= per annum indefinitely then the PBP =

$$\frac{37,910}{10,000} = 3.79 \text{ years}$$

The shorter the PBP the more viable the investment and thus the better the choice of such investments.

2. **Under non-uniform cash inflows:**

Under non-uniformity PBP computation will be in cumulative form and this means that the net cash inflows are accumulated each year until initial investment is recovered.

Example

Assume a project costs Sh.80,000 and will generate the following cash inflows:

Cash inflows			**Accumulated inflows**
Inflows year 1	=	10,000	10,000
Inflows year 2	=	30,000	40,000
Inflows year 3	=	15,000	55,000
Inflows year 4	=	20,000	75,000
Inflows year 5	=	30,000	105,000

The Sh.80,000 cost is recovered between year 4 and 5. During year 5 (after year 4) Sh.5,000 is (80,000 – 75,000) is required out the total year 5 cash flows of 30,000.

Therefore the PBP = 4yr s+ $\frac{5,000}{30,000}$ = 4.17 years

Example

Cedes limited has the following details of two of the future production plans. Only one of these machines will be purchased and the venture would be taken to be virtually exclusive. The Standard model costs £50,000 and the Deluxe cost £88,000 payable immediately. Both machines will require the input of the following:

i) Installation costs of £20,000 for Standard and £40,000 for the Deluxe
ii) A £10,000 working capital through their working lives.

Both machines have no expected scrap value at end of their expected working lives of 4 years for the Standard machine and six years for the Deluxe. The operating pre-tax net cash flows associated with the two machines are:

Year	1	2	3	4	5	6
Standard	28,500	25,860	24,210	23,410	-	-
Deluxe	36,030	30,110	28,380	25,940	38,500	35,100

The deluxe machine has only been introduced in the market and has not been fully tested in the operating conditions, because of the high risk involved the appropriate discount rate for the deluxe machine is believed to be 14% per annum, 2% higher than the rate of the standard machine. The company is proposing the purchase of either machine with a term loan at a fixed rate of interest of 11% per annum, taxation at 30% is payable on operating cash-flows one year in arrears and capital allowance are available at 25% per annum on a reducing balance basis.

Required

For both the Standard and the Deluxe machines, calculate the payback period.

Solution

Establish the cash flows as follows:

Pre-tax inflows (EBDT)	XX
Less depreciation = capital allowance	(XX)
Earnings before tax	XX
Less tax	(XX)
Earnings after tax	XX
Add back capital allowance/depreciation	XX
Operating cash flows	XX

Note

Capital allowance/depreciation is a non- cash item thus when deducted for tax purposes, it should be added back to eliminate the non-cash flow effects.

Cash flows for standard machine:

Year	1	2	3	4	5
Pretax inflow	28,500	25,850	24,210	23,410	-
Less allowance (depreciation)	17,500	13,125	9,844	7,383	-
Taxable cash inflows	11,000	12,735	14,366	16,027	
Tax @ 30% 1 yr in arrears	-	3.300	(3,831)	(4,310)	(4,808)
	11,000	9,435	10,545	11,717	(4,808)
Add back capital allowance	17,500	13,125	9,844	7,383	-
Operating cash flows	28,500	22,560	20,389	19,100	(4,808)
Add working capital realised	-	-	-	10,000	-
Total cash flows	28,500	22,560	20,389	29,100	(4,808)

Cash flows for Deluxe machine

Year	1	2	3	4	5	6	7
Pretax inflows	36,030	30,110	28,380	25,940	38,560	35,100	-
Less (depreciation)	32,000	24,000	18,000	13,500	10,125	7,594	-
	4,030	6,110	10,380	12,440	28,435	27,506	-
Tax @ 30% in arrears	-	(1,209)	(1,833)	(3,114)	(3,732)	(8,531)	(8,252)
Inflows after tax	4,030	4,901	8,547	9,326	24,703	18,975	(8,252)
Add back capital	32,000	24,000	18,000	13,500	10,125	7,594	-
Allowance		28,901	26,547	22,826	34,828	26,569	(8,252)
	-	-	-	-	-	10,000	-
Add back w/capital	36,030	28,599	26,547	22,826	34,828	36,569	(8,252)
Total cash flows							

		Standard		Deluxe
Cost	50,000 + 20,000	70,000	88,000 + 40,000	128,000

Year	Cash flows	Accumulated	Cash flows	Accumulated
1	28,500	28,500	36,030	36,030
2	22,560	51,060	28,901	64,931
3	20,389	71,449	26,547	91,478
4	29,100	100,549	22,826	114,304
5	(4,808)	95,741	34,828	149,132
6	-	-	36,569	185,701
7	-	-	(8,252)	179,449

* Pay back period for standard: Initial capital of Sh.7,000 is recovered during year 3. After year 2, we require 70,000 – 9,060 = 18,940 to recover initial capital out of year 3 cash flows of Sh.20,389.

* Applying the same concept for Deluxe, payback period would be:

$$4 + \frac{128{,}000 - 114{,}304}{34{,}828} = 4.39 \text{ years}$$

Accounting Rate of Return Method (ARR)

This method uses accounting profits from financial status to assess the viability of investment proposal by diving the average income after tax by average investment. The investment would be equal to either the original investment plus the salvage value divided by two or the initial investment divided by two or dividing the total of the investment book value after depreciating by the life of the project. This method is also known as financial statement method or book value method. The rate of return on asset method or adjusted rate of return method is given by:

$$ARR = \frac{\text{Average income}}{\text{Average investment}} \times 100 \text{ or } \frac{\text{Average income} - \text{Average depreciation}}{\text{Initial investment}}$$

Unlike PBP, this method will ascertain the profitability of an investment and it will give results which are consistent with those given by return ratios e.g.

	Shs.
Project X cost	500,000
Scrap value	100,000

Stream of income before depreciation and taxes are as follows:

	Shs.
Year 1	100,000
Year 2	120,000
Year 3	140,000
Year 4	160,000
Year 5	200,000

Let tax = 50% and depreciation straight line. Calculate the accounting rate of return.

Solution

$$\text{Depreciation} = \frac{500{,}000 - 100{,}000}{5 \text{ years}} = \text{Shs.}80,000$$

Year	1	2	3	4	5
Income	100,000	120,000	140,000	160,000	200,000
Less depreciation	80,000	80,000	80,000	80,000	80,000
Earnings before tax EBT	20,000	40,000	50,000	80,000	120,000
Less tax @ 50%	(10,000)	(20,000)	(30,000)	(40,000)	(60,000)
EAT	10,000	20,000	30,000	40,000	60,000

Average income (EAT) = 32,000

Average investment = (500,000 + 100,000) ½ = 300,000

$$\text{Or } ARR = \frac{\text{Average income}}{\text{Average investment}} \times 100 = \frac{32{,}000}{300{,}000} \times 100 = 10.67\%$$

Note

The best method of depreciation to use should be that which will produce larger depreciation changes in the 1st few years of the assets life and lesser changes in the later years because this will produce a higher tax shield to the company with higher value of inflows. Thus reducing balance is preferred as compared to sum of digits and straight line method.

The salvage value should be treated as follows:

If the asset produces a salvage value at the end of the year, this will increase inflows for payback period. This value is only used to ascertain how much the company will reduce original cost of investment to obtain average investment.

Acceptance Rule of Payback Period (Pbp)

Using PBP method a company will accept all those ventures whose payback period is less than that set by the management and will reject all those ventures whose PBP is more than that set by the management. Alternatively, PBP may be gauged against the term of the loan in which case the PBP method will give a high ranking to all those ventures paying back before the term of the loan and the highest ranking will be given to those projects with shortest PBP. However, in assessing the viability of a venture it is also important to see which venture brings returns earlier, other things being equal.

Advantages of Payback Period

1. Simple to use and understand and this has made it popular among executives especially traditional financial managers in ascertaining the viability of a venture.
2. Ideal under high-risk investments because it will identify which venture will payback earlier thus minimising the risks with a venture.
3. Advantageous when choosing between mutually exclusive projects because it will give a clue as to which venture is viable if one considers the shortest PBP and the highest inflow of a venture.

Disadvantages of Payback Period

1. Does not take into account time value of money and assumes that a shilling received in the 1st year and in the Nth year have the same value so as to rank them together to ascertain the PBP which is unrealistic given that a shilling now is valuable than a shilling N years from now.
2. PBP method does not measure the profitability of a venture but rather measures the period of time a venture takes to pay back the cost. The method is outside looking (lender oriented rather than owner oriented).
3. PBP method ignores inflows after PBP and as such, it does not accommodate the element of return to an investment.
4. This method will not have any impact on the company"s share prices because profitability which is one of the most important factors in gauging the company"s value of shares is not a function of PBP and as such the method fall short of meeting the criteria of investment appraisal.

Acceptance Rule of Accounting Rate of Return (Arr)

ARR method will accept those projects whose ARR is higher than that set by management or bank rate and it will give highest ranking to ventures with highest ARR and vice versa.

Advantages

1. Simple to understand and use.
2. Readily computed from accounting data thus much easier to ascertain.

3. It is consistent with profitability objectives as it analyses the return from entire inflows and as such it will give a clue or a hint to the profitability of venture.

Disadvantages

1. It ignores time value of money.
2. It does not consider how soon the investment should recover the cost (it is owner looking than creditor oriented approach).

3. It uses accounting profits instead of cash inflows some of which may not be realisable.

MODERN METHODS OR DCF i.e. Discounted Cash Flow

Techniques 1. Present Value Concept

This concept acknowledges the fact that a shilling losses value with time and as such if it is to be compared with a shilling to be received in Nth year then the two must be at the same values. This means that an investor"s analytical power is increased by his/her ability to compare cash inflows and outflows separated from each other by time. He/she should be able to work in the reverse direction i.e. from future cash flows to their present values.

2. Present Value of a Lumpsum

Usually an investor would wish to know how much he/she would give up now to get a given amount in year 1, 2, … n. In this situation he would have to decide at what rate of discount also known as time preference rate, he/she will use to discount the anticipated lumpsum using this rate by applying the following formula:

$$Pv = \frac{L}{(1+K)^n}$$

Where: Pv = Present value
L = Lumpsum
K = Cost of finance or time preference
rate n = given year.

This implies that if the time preference rate is 10%, the present value of 1/= to e received at the end of year 1 is:

$$Pv = \frac{1}{1}.1 = 0.909$$

The present value of inflows to be received in the 2nd year to Nth year, will be equal to:

$$Pv = \frac{A}{(1+K)^N}$$

Where: A = annual cash flows
N = Number of years

Also, the present value of a shilling to be received at a given point in time can in addition to using the above formula, be found using the present value tables.

Suppose that an investor can expect to receive:

40,000 at the end of year 2
70,000 at the end of year 6
100,000 at the end of year 8

Compute his present (value) if his time preference is 12%.

$$Pv = \frac{L}{(1+K)^N} = \frac{40,000}{(1.12)^2} + \frac{70,000}{(1.12)^6} \_ \frac{100,000}{(1.12)^8}$$

= Kshs.107,740.26

Using tables:

= 40,000(0.7992) + 70,000(0.5066) + 100,000(0.4039)
= 107,820

3. Present Value of an Annuity

An individual investor may not necessarily get a lumpsum after some years but rather get a constant periodic amount i.e. an annuity for certain number of years. The present value of an annuity receivable where the investor time preference is 10% equal to:

$$Pv(A) = \frac{A}{(1+i)}$$ I = time preference rate

E.g. Pv of 1/= to be received after 1 year if time preference rate is 10%.

$$= \frac{1}{1+0.1} = 0.909$$

After 2 years it will be: $\frac{A}{(1+i)^2} = \frac{1}{(1.1)^2} = 0.8264$

1st year	-	0.9090
2nd year	-	0.8264
3rd year	-	0.7513
4th year	-	0.6830
Total	-	3.1697

4. Present Value of Uneven Periodic Sum

In investment decisions it is very rare to get even periodic returns and in most cases a company will generate a stream of uneven cash inflows from a venture and the present value of those uneven periodic sums is equal to:

$$Pv = \frac{A_1}{(1+K)^1} + \frac{A_2}{(1+K)^2} + \frac{A_3}{(1+K)^3} + ... + \frac{AN}{(1+K)^N}$$

equation

$$Pv = \sum \frac{A}{(1+K)^t}$$

Where: A_t = Uneven cash inflows at time t
Pv = Present value
K =Cost of finance

A company contemplates to receive Shs.:

20,000 in year 1
18,000 in year 2
24,000 in year 3
Nil in year 4
40,000 in year 5

Cost of this finance is 12%

Required

Compute present value of that finance

Solution

$$Pv = \frac{30,000}{(1.12)^1} + \frac{18,000}{(1.12)^2} + \frac{24,000}{(1.12)^3} + \frac{40,000}{(1.12)^5}$$

$$= \underline{80,915.004}$$

5. Net Present Value Method

The method discounts inflows and outflows and ascertains the net present value by deducting discounted outflows from discounted inflows to obtain net present cash inflows i.e the present value method will involve selection of rate acceptable to the management or equal to the cost of finance and this will be used to discount inflows and outflows and net present value will be equal to the present value of inflow minus present value of outflow. If net present value is positive you invest, If NPV is negative you do not invest.

Pv(inflow) – Pv(outflows) = NPV

Note

Initial outflow is at period zero and their value is their actual present value. With this method, an investor can ascertain the viability of an investment by discounting outflows. In this case, a venture will be viable if it has the lowest outflows.

$$NPV = \left[\frac{A_1}{(1+K)^1} + \frac{A_2}{(1+K)^2} + \frac{A_3}{(1+K)^3} + \ldots + \frac{A_N}{(1+K)^N} \right] - C$$

Where: A = annual inflow
K = Cost of finance
C = Cost of investment
N = Number of years

Examples

Cost of investment = 100,000/=, interest rate = 10%, inflows year 1 = 80,000/= year 2 = 50,000/=

$$NPV = \frac{80,000}{1.1} + \frac{50,000}{(1.1)^2} - 100,000$$

= 14,049 positive hence invest.

Example

Jeremy limited wishes to expand its output by purchasing a new machine worth 170,000 and installation costs are estimated at 40,000/=. In the 4th year, this machine will call for an overhaul to cost 80,000/=. Its expected inflows are:

	Shs.
Year 1	60,000
Year 2	72,650
Year 3	35,720
Year 4	48,510
Year 5	91,630
Year 6	83,715

This company can raise finance to purchase machine at 12% interest rate.
Compute NPV and advise management accordingly.

Solution

	Shs.
Cost of machine at present value	170,000
Installation cost	40,000
	210,000

Overhaul cost in the 4th year = 80,000
Discounting factor = $(1.12)_4$

Therefore present value = $\frac{80,000}{(1.12)_4}$ = Shs.50,841.446

Total present value of investment = 260,841.45

$$PV\ inflows = \frac{60,000}{(1.12)} + \frac{72,650}{(1.12)^2} + \frac{35,720}{(1.12K)^3} + \frac{48,510}{(1.12)^4} + \frac{91,630}{(1.12)^5} + \frac{83,715}{(1.12)^6}$$

= 262,147.28

Therefore: NPV = 262,147.28 – 260,841.45

NPV = 1,305.83

The NPV is positive and I would advise the management to invest.

Example

Resilou limited intends to purchase a machine worth Shs.1,500,000 which will have a residue value Shs.200,000 after 5 years useful life. The saving in cost resulting from the use of this machine are:

	Shs.
Year 1	800,000
Year 2	350,000
Year 3	-
Year 4	680,000
Year 5	775,000

Using NPV method, advise the company whether this machine should be purchased if the cut off rate is 14% and acceptable saving in cost is 12% of the cost of the investment.

Solution

Year	1	2	3	4	5
Saving	800,000	350,000	-	680,000	775,000
Scrap value	-	-	-	-	200,000
Total amount	800,000	350,000	-	680,000	975,000

$$\text{NPV} = \frac{800,000}{(1.14)^1} + \frac{350,000}{(1.14)^2} + \frac{680,000}{(1.14)^4} + \frac{975,000}{(1.14)^5} - 1,500,000$$

$$= 1,880,067.1 - 1,500,000$$

$$= 380,067.07$$

$$\text{Return} = \frac{380,067.0}{1,500,000} \times 100 = 25.337\% > 12\% \text{ hence invest.}$$

NB: Assuming that the salvage will be realised.

Example

A section of a roadway pavement costs £400 per year to maintain. What new expenditure of a new pavement is justified if no maintenance will be required for the 1st five years then £100 for the next 10 years and £400 a year thereafter? Assume cost of finance to be 5%.

Solution

Total present value of maintenance costs under the re-surfacing scheme.

$$\text{Maximum expenditure} = \frac{400}{0.05} = £8,000$$

Present value of an Annuity for n years is given by the formula:

$$PV = A\left[\frac{1-\frac{1}{(1+K)^n}}{K}\right]$$

Whereby: PV is Present value
A is annuity
K is cost of finance
n is number of year

Present value of an annuity to perpetuity is given by the formula

$$Pv = \boxed{}$$

Whereby: PV is Present value
A is annuity
K is cost of finance

Therefore PV maximum expenditure = $\boxed{}$

PV = Minimum expenditure = £[4,453]
= Justified expenditure = £3,547

$$PV = 100\left[\frac{1-\frac{1}{(1.05)^{15}}}{0.5}\right] - 100\left[\frac{1-\frac{1}{(1.05)^{5}}}{0.5}\right] + \frac{400}{0.5} - 400\left[\frac{\frac{1}{(1.05)^{15}}}{0.5}\right]$$

= £4,453

NB:The present value interest factors PVIF = $\frac{1}{(1+r)^n}$ and present value Annuity factors, PVAF = $\frac{1-(1+r)^{-n}}{r}$ can be read from tables provided at the point of interseption between the discounting rate and number of periods.

ACCEPT OR REJECT RULE OF NPV

Under this method, a company should accept an investment venture if N.P.V. is positive i.e. if present value of cash outflows exceeds that of cash inflows or at least is equal to zero. (NPV ≥0). This will rank ventures giving the highest rank to that venture with highest NPV because this will give the highest cash inflow or capital gain to the company.

Advantages of NPV

- It recognises time value of money and such appreciates that a shilling now is more valuable than a shilling tomorrow and the two can only be compared if they are at their present value.
- It takes into account the entire inflows or returns and as such it is a realistic gauge of the profitability of a venture.
- It is consistent with the value of a share in so far as a positive NPV will have the implication of increasing the value of a share.

4. It is consistent with the objective of maximising the welfare of an owner because a positive NPV will increase the net worth of owners.

Disadvantages of NPV

- It is difficult to use.
- Its calculation uses cost of finance which is a difficult concept because it considers both implicit and explicit whereas NPV ignores implicit costs.
- It is ideal for assessing the viability of an investment under certainty because it ignores the element of risk.
- It may not give good assessment of alternative projects if the projects are unequal lives, returns or costs.
- It ignores the PBP.

Irr (Internal Rate Of Return)

This method is a discounted cash flow technique which uses the principle of NPV. It is defined as the rate which equates the present value of cash outflows of an investment to the initial capital.

IRR = Pv (cash inflows) = Pv(cash outflows) or IRR is the cost of capital when NPV = 0.

It is also called internal rate of return because it depends wholly on the outlay of investment and proceeds associated with the project and not a rate determined outside the venture.

$$IRR = C = \frac{A_1}{(1+r)^1} + \frac{A_2}{(1+r)^2} + \frac{A_3}{(1+r)^3} + \ldots + \frac{A_N}{(1+r)^N}$$

A = inflow for each period
C = Cost of investment

The value r can be found by:

i) Trial and error
ii) By interpolation
iii) By extrapolation

i) Trial and error method

a) Select any rate of interest at random and use it to compute NPV of cash inflows.
b) If rate chosen produces NPV lower than the cost, choose a lower rate.
c) If the rate chosen in (a) above gives NPV greater than the cost, choose a higher rate. Continue the process until the NPV is equal to zero and that will be the IRR.

Example

A project costs 16,200/= and is expected to generate the following inflows:

	Shs.
Year 1	8,000
Year 2	7,000
Year 3	6,000

Compute the IRR of this venture.

Solution

1st choice 10%

$$\frac{8,000}{(1.1)^1} + \frac{7,000}{(1.1)^2} + \frac{6,000}{(1.1)^3} = 17,565.74 > \text{cost, choose a higher rate.}$$

2nd choice 14%

$$\frac{8,000}{(1.14)^1} + \frac{7,000}{(1.14)^2} + \frac{6,000}{(1.14)^3} = 16,453.646$$

3rd choice 15%

$$\frac{8,000}{(1.15)^1} + \frac{7,000}{(1.15)^2} + \frac{6,000}{(1.15)^3} = 16,194.625$$

IRR lies between 14% and 15%.

ii) Interpolation method

			Difference
PV at rate of 14%	=	16,453.646	
			253.646
PV required	=	16,200.000	
			-5.375
PV at rate of 15%	=	16,194.625	

Therefore, r denotes required rate of return

Therefore, r $= 14\% + (15\% - 14\%) \times \frac{253.646}{253.646+5.375}$

$= 14\% + 0.98\%$

$= \underline{14.98\%}$

Acceptance Rule of IRR

IRR will accept a venture if its IRR is higher than or equal to the minimum required rate of return which is usually the cost of finance also known as the cut off rate or hurdle rate, and in this case IRR will be the highest rate of interest a firm would be ready to pay to finance a project using borrowed funds and without being financially worse off by paying back the loan (the principal and accrued interest) out of the cash flows generated by that project. Thus, IRR is the break-even rate of borrowing from commercial banks.

Advantages of IRR

- It considers time value of money
- It considers cash flows over the entire life of the project.
- It is compatible with the maximisation of owner"s wealth because, if it is higher than the cost of finance, owners" wealth will be maximised.
- Unlike the NPV method, it does not use the cost of finance to discount inflows and for this reason it will indicate a rate of return of interval to the project against which various ventures can be assessed as to their viability.

Disadvantages of IRR

- Difficult to use.
- Expensive to use because it calls for trained manpower and may use computers especially where inflows are of large magnitude and extending beyond the normal limits.
- It may give multiple results some involving positive IRR in which case it may be difficult to use in choosing which venture is more viable.

PROFITABILITY INDEX (P.I.)

$$\text{P.I. (benefit-cost ratio)} = \frac{\text{Present value of inflows}}{\text{Present value of cash outlay}}$$

If P.I. is greater than 1.0, invest. If less than 1.0, reject.

Example

The following information was from XYZ feasibility studies. It has studied two ventures:

a) Cost 100,000/= and 160,000/= at the beginning of the 4th year and it will generate inflows 1-3rd year 80,000/= and from 4-6th year 50,000/= per annum.

b) Initial cost 200,000/= and 80,000/= at the beginning of the 4th year and it will generate the following inflows:

1st – 2nd year -> Shs.100,000 per annum
3rd – 6th year -> Shs.70,000 per annum

Using the cost of finance of 12% compute the P.I. of these two ventures, advise the company accordingly.

Solution

a) Outflows: $\frac{100,000}{1} + \frac{160,000}{(1.12)^3} = 100,000 + 113,887 = 213,885$

Inflows: $\frac{80,000}{(1.12)^1} + \frac{80,000}{(1.12)^2} + \frac{80,000}{(1.12)^3} + \frac{50,000}{(1.12)^4} + \frac{50,000}{(1.12)^5} + \frac{50,000}{(1.12)^6} = \text{Shs.}277,626$

P.I. $= \frac{277,626}{213,885}$

P.I. $= 1.298$

b) Outflows: $= \frac{200,000}{1} + \frac{80,000}{(1.12)^3} = 256,944$

Inflows $= \frac{100,000}{(1.12)^1} + \frac{100,000}{(1.12)^2} + \frac{70,000}{(1.12)^3} + \frac{70,000}{(1.12)^4} + \frac{70,000}{(1.12)^5} + \frac{70,000}{(1.12)^6} = \text{Shs.}338,501$

P.I. $= \frac{338,501}{256,944}$

$= 1.32$

Example
A company is faced with the following 5 investment opportunities:

	Cost	NPV	P.I = Total P.v / Initial capital	P.I Ranking
1.	500,000	150,000	1.3	4
2.	100,000	40,000	1.4	3
3.	400,000	40,000	1.1	5
4.	200,000	100,000	1.5	2
5.	160,000	90,000	1.6	1

This company has 750,000/= available for investment projects, 3 and 4 are mutually exclusive. All of the projects are divisible. Which group should be selected in order to maximise the NPV. Indicate this NPV figure.

Solution

Using P.I. to rank the projects in order of preference 5, 4, 2, 1, 3.

In order to maximise NPV, the following projects combination should be selected:

			Shs.
Funds available for investment			750,000
Cost of project:	5	160,000	
	4	200,000	
	2	100,000	
	1	290,000	(750,000)
			NIL

$$NPV = 90,000 + 100,000 + 40,000 + \frac{290,000}{500,000} \times 150,000 = 317,000$$

Advantages of profitability index

a) Simple to use and understand.

b) The element of NPV in the venture will indicate which venture is more powerful as the most profitable venture will have the highest P.I. as the difference or net P.I. will continue to the company"s profitability.

c) It acknowledges time value for money and at the same time the NPV of a venture at its present value which is consistent with investment appraisal requirements.

Disadvantages of profitability index

a) It may be useful under conditions of uncertain cost of finance used to discount inflows and yet this cost is a complex item due to the implicit and explicit element.

b) It may be difficult to ascertain if the economic life of a venture is long and it yields large inflows because their discounting may call for use of computers that are expensive.

COMPARISON OF METHODS

Both traditional and modern methods will show or indicate strong weaknesses such that a company cannot use either to select a viable venture and for this reason the selection of the investment will depend on which method the company has identified it can meet its investment needs. The choice should not be limited to one method but at least 2 modern methods. In all, when ranking projects, a conflict will rise between IRR and NPV especially under the following conditions:

i) If the lives of the projects are different.
ii) Where the cash outlay is larger than the other.
iii) When the cash flow pattern differs i.e the cash flows of one project may overtime increase while those of the other decrease. In this case NPV may give consistently correct solution especially so because it does not yield multiple rates.

PBP RECIPROCAL

PBP expresses the profitability of a project in terms of years. It does not show any return as measure of investment. The PBP reciprocal has been utilised to rectify the situation, but it is only of value where the pattern of cash flow is relatively consistent and where the life of the asset is at least double the payback period of the asset. The payback period is expressed as:

$$\frac{\text{Investment}}{\text{Annual cash flows}}$$

This PBP reciprocal is often used as a guide to ascertain the discount factor in discounted cash flow calculations i.e. to approximate IRR.

$$\text{Payback period reciprocal} = \frac{1}{\text{PBP}} \times 100$$

REPLACEMENT OF ASSETS

Example

Estate Developers purchased a machine five years ago at a cost of £7,500. The machine had an expected economic life of 15 years at the time of purchase and a zero estimated salvage value at the end of 15 years. It is being depreciated on a straight line basis and currently has a book value of £5,000. The Financial Manager has conducted a feasibility study aimed at acquiring a new machine for £ 12,000 and is depreciated over its 10 years useful life. The new machine will expand sales from £10,000 to £11,000 per annum and will reduce labour and materials usage sufficiently to cut operating cost from £7,000 to £5,000. The salvage value of the new machine is £2,000 at the end of useful life. The current market value of the old machine is £1,000 and tax is 40%. The firms cost of capital is 10%. The financial manager wishes to make a decision on whether to replace the old machine with a new one and he seeks your held.

N.B. The decision to replace takes into account the following:

a) Estimate the actual cash outlay attributable to the new machine
b) Determine the incremental cash flows.
c) Compute the NPV of incremental cash flows.
d) Add up the present value of the expected salvage value to the P.V. of the incremental cash flow.
e) Ascertain whether the NPV (net present value) is positive or whether the IRR (internal rate of return) exceed the cost in which case invest if its positive.

Solution

a)	Initial capital for new machines			£
	Cash price of new machine Less			12,000
	market value of old machine			(1,000)
	Less tax shield on sale of old machine: Market value		1,000	
	Less net book value		5,000	
	Loss on disposal		4,000	
	Tax shield = 40% x 4,000			(6,000)
	Increamental initial capital			9,400

b)	Depreciation of new machine	=	$\frac{12{,}000 - 2{,}000}{10yr\ s}$	=	1,000
	Depreciation of old machine	=	$\frac{5{,}000 - 0}{10yr\ s}$	=	500
	Increamental depreciation				500

NB: The NBV of old machine after 5 years is £5,000. This NBV will be depreciated over the remaining 10 years.

Determine operating cash flows:

Increamental sales = 11,000 – 10,000	1,000
Savings in labour costs = 5,000 – 7,000	2,000
Increamental EBDT	3,000
Less increamental depreciation (non-cash item)	(500)
Increamental EBT	2,500
Less tax @ 40%	1,000
Increamental EAT	1,500
Add back increamental depreciation	500
Annual cash flow	2,000

Terminal cash flows at end of year 10 is equal to increamental salvage value.

New machine salvage value	2,000
Less old machine salvage value	0
	2,000

Compute the NPV @10% cost of capital:

P.V of cash flows = $2000x\ \frac{1-(1.1)^{-10}}{0.10}$ = 2,000x PVAF10% ,10 = 2,000x6.145	12,290
P.V of salvage value = $2{,}000x\ \frac{1}{(1.1^{10})}$ = 2,000x PVIF10% ,10 = 2,000x0.386	772
	13,062
Less increamental initial capital	(9,400)
Increamental N.P.V	3,662

Replace the old machine

REINFORCING QUESTIONS

QUESTION ONE

What are the advantages of discounted cash flows methods?

QUESTIONTWO

Kiwanda Limited is considering the purchase of a new machine. Two alternative machines, Pesi TZO and Upesi MO2, which will cost Sh.6,000,000 and Sh.7,000,000 respectively are available in the market. The cash flow after taxation of each machine are as follows:

	Cash flow	
Year	**Pesi TZO**	**Upesi MO2**
	Sh.	**Sh.**
1	600,000	1,800,000
2	1,800,000	2,400,000
3	2,000,000	3,000,000
4	3,000,000	1,800,000
5	2,400,000	1,600,000

Required

a) Compute the net present value of each machine. (8 marks)

b) Assuming that each machine represents a project:
Compute the return Kiwanda Limited expects to earn from each of the two projects. (10 marks)
Comment on the use of the results obtained in (a) and (b)(i) above in selecting between the two projects. (4 marks)

(Total: 22 marks)

QUESTIONTHREE

The Weka Company Ltd. has been considering the criteria that must be met before a capital expenditure proposal can be included in the capital expenditure programme. The screening criteria established by management are as follows:

No project should involve a net commitment of funds for more than four years.
Accepted proposals must offer a time adjusted or discounted rate of return at least equal to the estimated cost of capital. Present estimates are that cost of capital as 15 percent per annum after tax.
Accepted proposals should average over the life time, an unadjusted rate of return on assets employed (calculated in the conventional accounting method at least equal to the average rate of return on total assets shown by the statutory financial statements included in the annual report of the company.

A proposal to purchase a new lathe machine is to be subjected to these initial screening processes. The machine will cost Sh.2,200,000 and has an estimated useful life of five years at the end of which the disposal value will be zero. Sales revenue to be generated by the new machine is estimated as follows:

Year	Revenue (Sh."000")
1	1,320
2	1,440
3	1,560
4	1,600
5	1,500

Additional operating costs are estimated to be Sh.700, 000 per annum. Tax rates may be assumed to be 35% payable in the year in which revenue is received. For taxation purpose the machine is to be written off as a fixed annual rate of 20% on cost.

The financial accounting statements issued by the company in recent years shows that profits after tax have averaged 18% on total assets.

Required

Present a report which will indicate to management whether or not the proposal to purchase the lathe machine meets each of the selection criteria. **(Total: 19 marks)**

QUESTION FOUR

a) What are the features of a sound appraisal technique? (6 marks)

b) What practical problems are faced by finance managers in capital budgeting decisions? (6 marks)

c) Describe the features of long term investment decisions. (8 marks)

QUESTIONFIVE

KK Ltd has six projects available for investment as follows:

Project	**Initial cost Sh.'M'**	**NPV @ 15% cost of capital**
1	60	21
2	15	9
3	20	9
4	55	15
5	30	20
6	40	-2

The firm has Sh.100 M available for investment.
Identify which projects should be undertaken. Using P.I and NPV ranking, comment on your answer.

CHECK YOUR ANSWERS WITH THOSE PROVIDED IN THE LESSON 10

LESSON SIX

VALUATION CONCEPTS IN FINANCE

INSTRUCTIONS

- Read Chapter 8 of Financial Management text book by I. M Pandey.
- Complete answers to **reinforcement** questions at the end of the lesson.
- Check model answers given in lesson 10 of the study pack.
- Reinforcing Comments

CONTENTS

- Bases and importance of valuation
- Valuation of ordinary shares
- Valuation of bonds and Debentures

VALUATION OF BUSINESS

A business may be valued for different reasons such as for merger, takeover, acquisition, or outright sale or liquidation. In purchasing a business, a buyer will be interested in not only the assets but also the future income this business is expected to generate.

BASES OF VALUATION

1. **Theoretical value** – In theory, if a purchaser buys a business, he is simply buying a stream of future income flows and to arrive at the actual purchase price the buyer will:

   a) Consider the estimated probable cash flows.
   b) Discount cash flows to their present value.
   c) Add together the separate amounts to give the present value of income stream.
   Where future income flows are constant:

$$PV = C \left[\frac{1-(1+r)^{-n}}{r} \right]$$

Where: PV = Present value of income stream
c = Inflow per annum
r= Discounting rate
n= Number of years the inflows will last

Example

As a result of the purchase of an asset, the income stream will increase by £1,000 per annum for 25 years. Assuming a discount rate of 20%, compute the maximum price to be paid for this asset ignoring taxation.

Solution

Maximum price = Present value of all future cash inflows

Maximum price = £10,000 x $PVAF_{20\%,25}$

$$= £10{,}000 \times \frac{1-(1.2)^{-25}}{0.20} = 10{,}000 \times 4.9476$$

$$= £49{,}476$$

In practice the income streams are never uniform and have to be estimated from existing income shown in the recent accounts.

2. **Earning method** – The business is valued according to the total stream of income it is expected to generate over its lifetime.

Determination of maintainable earnings

a) The first step in arriving at earning based valuation is to estimate the future maintainable earnings and if the conditions in the future are expected to be similar to those in the past, it is then prudent to face the forecast on the historical figures. However, conditions do change and as such changes in cost and revenue. Therefore, a detailed examination of profits of the most recent profit and loss account will be necessary to estimate the effects

of the changes. While the information given will depend upon the nature of the business the general principles to bear in mind must include the trend of sales and gross profit.

b) Analysis of sales and gross profit percentage by:

i) Product lines
ii) Departments
iii) Geographical areas
iv) Customer type.

c) Costs as a percentage of total sales.
d) Unusual fluctuations in the ratios.
e) Necessity of expenditure in the business e.g. excessive remuneration on expenses charged.
f) Inclusion of all costs.
g) Effects of external conditions such as inflation or recession.

However, there are several ways of arriving at the value based on the earnings valuation.

i) Earnings yield valuation
ii) Price earnings ratio valuation
iii) Super profits valuation

I) Earnings Yield Valuation

EY is given by the earnings made by the business expressed as a percentage of the market price of the business i.e.

$$EY = \frac{\text{Earnings}}{\text{Market price of equity}} \times 100$$

$$EY = \frac{EPS}{MPS} \times 100 = \frac{\text{Earnings to Shareholders}}{\text{Market value of equity}}$$

$$\text{Therefore Market Value} = \frac{\text{Earning to shareholders}}{\text{Earnings yield}}$$

Example

Estimated maintainable earnings are £240,000 per annum, rate of return required is 25%. Compute the value of the business.

$$\text{Value MV)} = \frac{E}{EY} \times 100$$

$$= \frac{240{,}000}{0.25} \times 100$$

$$\text{M.V.} = £960{,}000$$

This method can be converted into the theoretical base, especially if the business is going concern.

$$PV = \frac{C}{i}\left[1 - \frac{1}{(1+0.25)^N}\right]$$

Note

As N approaches ∞

$$P_V = \frac{C}{r}$$

$$= \frac{240{,}000}{0.25} = £960{,}000$$

ii) Price Earning Ratio Valuation

P/E ratio is traditionally used for valuation of shares but it is an important ratio in the valuation of business. The P/E ratio is the measure of how may years earning would „purchase" the market value of the business and is given by:

$$\text{P/E ratio} = \frac{MV}{E}$$

$$MV = P/E \times E$$

NB: The value of the business can be calculated by taking estimated earnings x P/E ratio.

VALUATION OF SECURITIES:

The previous methods were ideal for valuing the entire business but it is also necessary to ascertain the value of part of a business namely shares, or securities or a block of shares in a limited liability company. The valuation of securities and shares in particular is necessary in the following aspects:

i) To facilitate take-over bids
ii) To allow for mergers.
iii) To facilitate for company accounts disclosure
iv) For purposes of acquisitions or disposal of blocks of shares.
v) For purposes of computing capital gains tax (not applicable in Kenya at present)
vi) For tax payers executors in assessing the capital transfers processes
vii) For ascertaining stamp duty payable.

However, a number of parties are interested in the value of shares and securities and such will include:

a) Company shareholders, directors and vendors of the company.
b) The existing and prospective shareholders.
c) Buyers of a company.
d) Transferee and transferor parties, in particular from the point of view of income tax.
e) Income tax department.

In this valuation, it is necessary to look at a company form:

i) Quoted company (quoted shares)
ii) Unquoted company (unquoted shares)

The valuation of shares will also be influenced by ownership of the company. If a company is owned by majority shareholders, its valuation will be different from if it was owned by minority shareholders. In addition, it is necessary to value shares because of:

a) It is a requirement of the Company"s Act 1948 in respect of quoted investments which should state the investment book value, market value and stock exchange value where this differs from market value. In this case, the Act recognises the fact that the value of shares may not always be reflected in the stock exchange price and for disclosure purposes, it must be reflected.

i) In respect of unquoted investments the company must state aggregate amount of the book value and also state either the directors valuation which could be different from investors own valuation. Also the company should give specifications of the earnings and dividends attributed to these shares. These are necessary to enable interested parties to make their own valuations.

ii) In respect of both quoted and unquoted, shares the company should give details of the shares so that they can assist in making a valuation of those shares judged to be significant for owning the company, namely, if individual investments exceed 10% of the issued shares of a given class or where the book value of the investment exceeds 10% of the company"s assets.

b) Capital transfer reasons i.e. the capital transfer requires a valuation of shares whether from one person to another or even if they are transferred at the time of death. Valuation date is important for valuation of companies" properties.

The main difficulties in valuation of shares are:

i) Existence and method of valuation of goodwill.
ii) Succession of company"s management
iii) Growth in dividend
iv) Growth in equity.

BASES OF SHARE VALUATION

Share valuation can be done on the basis of income and asset values. However, on the basis of income a share will be entitled to two forms of income. For this reason the bases of valuing shares are:

i) Earnings method
ii) Dividend method
iii) Assets method

I) Earnings Method (Or Earning Basis Valuation)

Using the earning valuation method, a company will use its P/E ratio to value its shares.

$$P/E = \frac{MV}{E}$$

MV = E x P/E -> value of ordinary share.

The MV can be determined where the estimated earnings have been established by applying the P/E ratio expected of this type of company.

Example

Company XYZ is expected to generate post tax earnings of Sh.200,000 per annum and companies in the same trade will generally have a P/E ratio of eight (8). On account of company XYZ limited size, a ratio of six (6) is considered more appropriate. The issued share capital is 1,000,000ordinary shares of Sh.50 each.

Required

Value of shares = EPS x P/E

= Earnings per share x P/E

= $\frac{200,000}{1,000,000}$ x 6 = Sh.12.00

Value of Business = Earnings x P/E ratio

MV = E x P/E = Sh.200,000 x 6 = Sh.1.2 million

ii) Dividend Basis Valuation

Ownership of shares in entities – The owner to receive a cash flow consisting of future dividends and the value of a share should correspond to the present value of this future cash flow. A shareholder cannot expect cash flows in perpetuity as he will sell his shares at one time.

$P_o = \frac{D_o}{K_e}$

Note: Where there is growth in equity, $P_0 = \frac{d_0 (1 + g)}{K_e - g}$

Example

Company XYZ pays a dividend of 10% on its Sh.60 par value ordinary shares. This company uses a discount rate of 15%. Assuming no growth, compute the value of its ordinary share if there"s growth of 5%, what would be the value of this company"s ordinary shares.

a) $P_o = \frac{D_o}{K_e}$ $P_o = \frac{6}{15\%}$ = Sh.40(no growth)

b) $P_o = \frac{6(1.05)}{0.15-0.05}$ = Shs.63 (5% growth rate)

iii) Asset Based Valuation

This method takes into account the entire business with reference to its assets and then divides the resultant value by the number of shares in an issue to give the per share. The principles are the same as those in the valuation of businesses computed already. However, if a historical dividend

based on earning based valuation produces a figure which is less than the asset value then there is a possibility that the buyer may be able to improve the management of the asset being taken over. In such a case, a buyer would be prepared to pay a price which though excessive in terms of income might be justified by the underlying assets value.

Example 1

Information extracted from the books of Kent Limited.

	Sh.		Sh.
Current liabilities	300,000	Land	250,000
Bank overdraft	50,000	Stock in trade	100,000
	350,000		350,000

Stock has a realisable value of Sh.80,000 and land Sh.300,000. This company is assumed to be have a share capital of 20,000 ordinary shares.

Compute the value of its shares.

i) Assets method

Assets = L & B	300,000
Stock	80,000
	380,000
Liabilities	[350,000]
	30,000

Value of shares = $\frac{30,000}{20,000}$ = Sh.1.50

Example 2

K & K Company Limited is planning to absorb three other companies so as to realise its sales records of Sh.500,000 per annum. Its accountants have advised the company to maintain such a size that it will enable its shares to sell at a minimum price of Sh.16. The company"s last published balance sheets indicate the following:

	Sh."000"
Ordinary shares of Sh.10 each	50,000
Reserves	65,000
Current liabilities	40,000
Total	155,000

Assets:	Sh.
Fixed assets	80,000
Current assets	75,000
Total	155,000

Profits for the last 5 years were as follows:

	Sh."000"
1.	9,000
2.	6,000
3.	10,000
4.	8,000
5.	17,000

P/E ratio applicable is 12:1

Compute the value of the business indicating the lowest offer price and the highest offer price and the share value thereof whether it would be viable to take on the three companies if its to maintain this share value.

P/E RATIO METHOD

P/E = 12:1 Average profits = 10,000,000

Therefore Value of business = 10,000,000 x 12 = Sh.120,000,000

Value of shares = $\frac{\text{Sh.120 million}}{\text{5 million shares}}$ = Sh.24

ASSETS METHOD

	Sh."000"
Assets	155,000
Less: Current liabilities	[40,000]
	115,000

Value of shares = $\frac{\text{Sh.115M}}{\text{5M shares}}$ = Sh.23

Where: P_o = Price of ordinary shares
d = Dividend at the end of year one
P_1 = Price of the share at the end of one year.

VALUATION OF BONDS AND DEBENTURES

This will depend on expected cash flows consisting of annual interest plus the principal amount to be received at maturity. The appropriate rate of capitalisation or discount rate to be applied will depend upon the riskiness of the bond e.g. government bonds are less risky and will therefore call for lower discount rates than similar bonds issued by private companies which will call for high rate of discount.

Valuation of bonds with maturity period

When a bond or debenture has reached maturity, its value can be determined by considering annual interest payments plus its terminal or maturity and this is done using the P.V. concept to discount the cash flows and the result will be compared to the market value of the bond to ascertain whether it has overvalued or undervalued.

$$\sum_{t=1}^{n} \frac{Int}{(1+kd)^t} + \frac{M}{(1+kd)^n}$$

Where: Int = Annual interest
Kd = Required rate of return
M = Terminal/maturity value
n = Number of years to maturity

Example

K is contemplating purchasing a 3 year bond worth 40,000/= carrying a nominal coupon rate of interest of 10%. K required rate of return is 6%.
What should he be willing to pay now to purchase the bond if it matures at par?

Solution

Int = 10% x 40,000 = 4,000 p.a.
n = 3 yrs
Kd = 6%
M = 40,000

$$Vd = \frac{4,000}{(1.06)^1} + \frac{4,000}{(1.06)^2} + \frac{4,000}{(1.06)^3} + \frac{40,000}{(1.06)^3}$$

= 4,000 x $PVAF_{6\%,3}$ + 40,000 x $PVIF_{6\%,3}$ = (40,000 x 2.673) + (40,000 x 0.840) = 44,292

REINFORCING QUESTIONS

QUESTION ONE

a) XYZ Ltd is expected to pay a DPS of Sh.6 in one year"s time. The dividend payout ratio is 60% and the Return on Equity is 15%.
Determine whether the share is overvalued if the MPS is Sh.40. (6 marks)

b) What is the significance of valuation securities? (5 marks)

c) ABC Ltd has issued a 5 year zero coupon rate bond with maturity value of Sh.100,000. The bond is issued at a discount of 32%.
Determine the rate of return of the bond. (5 marks)

d) What are the advantages of zero coupon bond? (5 marks)

(Total: 19 marks)

QUESTION TWO

Nyakua Limited is contemplating acquiring Uza Limited.
Incremental cash flows arising from the acquisition are expected to be as follows:

	Average of years (in Sh.'000')		
	1-5	**6-10**	**11-∞**
Cash flow after taxes	100	150	200
Investment required	50	60	70
Net cash flow	50	90	130

Uza Limited has an all equity capital structure. The required rate of return of Uza Limited is always 5 percent above the risk free rate. The risk free rate is 9 percent.

Required

a) Using the information provided, compute the maximum price that Nyakua Limited might pay for Uza Limited. (14 marks)

b) What other factors might influence the management of Nyakua Limited in their decision to purchase Uza Limited? (6 marks)

(Total: 20 marks)

QUESTION THREE

a) Andreas Company Ltd. currently pays a dividend of Sh.2 per share and this dividend is expected to grow at an annual rate of 15% for the first 3 years then at a rate of 10% for the next 3 years after which it is expected to grow at a rate of 5% thereafter.
What value would you place on the stock if an 18% rate of return were required? (7 marks)
Would your valuation change if you expected to hold the stock for only 3 years? Explain. (5 marks)

b) The stream of dividends of XYZ Ltd for the past 4 years was as follows:

Year	1999	2000	2001	2002
DPS Sh.	2.50	2.65	2.76	2.81

The cost of equity is 14%. Determine the price of a share. (8 marks)

QUESTION FOUR

a) The valuation of ordinary shares is more complicated than the valuation of bonds and preference shares. Explain the factors that complicate the valuation of ordinary shares. (6 marks)

The most recent financial data for the Rare Watts disclose the following:

Dividend per share	Sh.3.00
Expected annual dividend growth rate	6 percent
Current required rate of return	15 percent

The company is considering a variety of proposals in order to redirect the firm"s activities. The following four alternatives have been suggested:

1. Do nothing in which case the key financial variables will remain unchanged.
2. Invest in venture that will increase the dividend growth rate to 7% and lower the required rate of return to 14%.
3. Eliminate an unprofitable product line. The action will increase the dividend growth rate to 8% and raise the required rate of return to 17%.
4. Acquire a subsidiary operation from another company. This action will increase the dividend growth rate to 9% and required rate of return to 18%.

Required

For each of the proposed actions, determine the resulting impact price and recommend the best alternative.

(Total: 14 marks)

END OF COMPREHESIVE
CHECK YOUR ANSWERS WITH THOSE PROVIDED IN LESSON 10

LESSON SEVEN

DIVIDEND POLICIES AND DECISIONS

INSTRUCTIONS

- Read Chapters 20 and 21 of Financial Management text book by I. M Pandey.
- Complete answers to **reinforcement** questions at the end of the lesson.
- Check model answers given in lesson 10 of the study pack.
- Reinforcing Comments

CONTENTS

- Dividend Policy and Decisions
- Alternative Dividend Policies
- Dividend Theories
- Mode of paying Dividends
- Factors influencing dividend policies
- Dividend ratios

DIVIDEND POLICIES AND DECISIONS

Dividend policy determines the division of earnings between payment to stock holders ad re-investment in the firm. It therefore looks at the following aspects:

i). How much to pay – this encompassed in the four major alternative dividend policies.

- Constant Amount Of Dividend Per Share
- Constant Payout Ratio
- Fixed Dividend Plus Extra
- Residual Dividend Policy

ii) When to pay – paying interim or final dividends

iii) Why dividends are paid – this is explained by the various theories which has to determine the relevance of dividend payment i.e.:

- Residual dividend theory
- Dividend irrelevance theory (MM)
- Signalling theory
- Bird in hand theory
- Clientele theory
- Agency theory

iv) How to pay: cash or stock dividends.

Importance of Dividend Decisions

Dividends decisions are integral part of a firm"s **strategic financing** decision. It is therefore a plan of action adopted by management e.g payment of high dividends means less retained earnings and the firm may have to go to the market to borrow for investment purposes. This will increase its gearing level.

Solution to the Dividend Puzzle

A firms dividend decision may have some relevance to the firm"s share value. The managers therefore requires to formulate an optimal dividend policy which will maximize the wealth of the shareholders (value of shares).

i) HOW MUCH TO PAY: ALTERNATIVE DIVIDENDS POLICIES

a) Constant payout ratio

This is where the firm will pay a fixed dividend rate e.g. 40% of earnings. The DPS would therefore fluctuate as the earnings per share changes.

Dividends are directly dependent on the firms earnings ability and if no profits are made no dividend is paid.

This policy creates uncertainty to ordinary shareholders especially who rely on dividend income and they might demand a higher required rate of return.

b) Constant amount per share (fixed D.P.S.)

The DPS is fixed in amount irrespective of the earnings level. This creates certainty and is therefore preferred by shareholders who have a high reliance on dividend income.

It protects the firm from periods of low earnings by fixing, DPS at a low level.

This policy treats all shareholders like preferred shareholders by giving a fixed return. The DPS could be increased to a higher level if earnings appear relatively permanent and sustainable.

c) Constant DPS plus Extra/Surplus

Under this policy a constant DPS is paid every year. However extra dividends are paid in years of supernormal earnings.

It gives the firm flexibility to increase dividends when earnings are high and the shareholders are given a chance to participate in super normal earnings

The extra dividends is given in such a way that it is not perceived as a commitments by the firm to continue the extra dividend in the future. It is applied by the firms whose earnings are highly volatile e.g agricultural sector.

d) Residual dividend policy

Under this policy dividend is paid out of earnings left over after investment decisions have been financed. Dividend will only be paid if there are no profitable investment opportunities available. The policy is consistent with shareholders wealth maximization.

ii) WHEN TO PAY

Firms pay interim or final dividends. Interim dividends are paid at the middle of the year and are paid in cash. Final dividends are paid at year end and can be in cash or bonus issue.

iii) DIVIDENDS THEORIES (WHY PAY DIVIDENDS)

The main theories are:

1. Residual dividend theory

Under this theory, a firm will pay dividends from residual earnings i.e. earnings remaining after all suitable projects with positive NPV has been financed.
It assumes that retained earnings is the best source of long term capital since it is readily available and cheap. This is because no floatation cash are involved in use of retained earnings to finance new investments.
Therefore, the first claim on earnings after tax and preference dividends will be a **reserve** for financing investments.
Dividend policy is irrelevant and treated as passive variable. It will not affect the value of the firm. However, investment decisions will.

Advantages of Residual Theory

1. Saving on floatation costs

No need to raise debt or equity capital since there is high retention of earnings which requires no floatation costs.

2. Avoidance of dilution of ownership

New equity issue would dilute ownership and control. This will be avoided if retention is high. A high retention policy may enable financing of firms with rapid and high rate of growth.

3. Tax position of shareholders

High-income shareholders prefer low dividends to reduce their tax burden on dividends income. They prefer high retention of earnings which are reinvested, increase share value and they can gain capital gains which are not taxable in Kenya.

ii) MM Dividend Irrelevance Theory

Was advanced by Modiglian and Miller in 1961. The theory asserts that a firm"s dividend policy has no effect on its market value and cost of capital.
They argued that the firm"s value is primarily determined by:

- Ability to generate earnings from investments
- Level of business and financial risk

According to MM dividend policy is a passive residue determined by the firm"s need for investment funds.
It does not matter how the earnings are divided between dividend payment to shareholders and retention. Therefore, optimal dividend policy does not exist. Since when investment decisions of the firms are given, dividend decision is a mere detail without any effect on the value of the firm.

They base on their arguments on the following assumptions:

1. No corporate or personal kites
2. No transaction cost associated with share floatation
3. A firm has an investment policy which is independent of its dividend policy (a fixed investment policy)
4. Efficient market – all investors have same set of information regarding the future of the firm
5. No uncertainty – all investors make decisions using the same discounting rate at all time i.e required rate of return (r) = cost of capital (k).

iii) Bird-in-hand theory

Advanced by John Litner (1962) and furthered by Myron Gordon (1963).
Argues that shareholders are **risk averse** and prefer certainty. Dividends payments are more certain than capital gains which rely on demand and supply forces to determine share prices.

Therefore, one bird in hand (certain dividends) is better than two birds in the bush (uncertain capital gains).
Therefore, a firm paying high dividends (certain) will have **higher value** since shareholders will require to use lower discounting rate.
MM argued against the above proposition. They argued that the required rate of return is independent of dividend policy. They maintained that an investor can realize capital gains generated by reinvestment of retained earning, if they sell shares.

If this is possible, investors would be indifferent between cash dividends and capital gains.

iv) Information signaling effect theory

Advanced by Stephen Ross in 1977. He argued that in an inefficient market, management can use dividend policy to signal important information to **the market which is only known to them.**

Example – If the management pays high dividends, it signals high expected profits in future to maintain the high dividend level. This would increase the share price/value and vice versa.

MM attacked this position and suggested that the change in share price following the change in dividend amount is due to **informational content of dividend policy** rather than dividend policy itself.Therefore, dividends are irrelevant if information can be given to the market to all players.
Dividend decisions are relevant in an inefficient market and the higher the dividends, the higher the value of the firm. The theory is based on the following four assumptions:

1. The sending of signals by the management should be cost effective.
2. The signals should be correlated to observable events (common trend in the market).
3. No company can imitate its competitors in sending the signals.
4. The managers can only send true signals even if they are bad signals. Sending untrue signals is financially disastrous to the survival of the firm.

v) Tax differential theory

Advanced by Litzenberger and Ramaswamy in 1979

They argued that tax rate on dividends is higher than tax rate on capital gains.Therefore, a firm that pays high dividends have lower value since shareholders pay more tax on dividends.
Dividend decisions are relevant and the lower the dividend the higher the value of the firm and vice versa.

Note

In Kenya, dividends attract a withholding tax of 5% which is final and capital gains are tax exempt.

vi) Clientele effect theory Advance

by Richardson Petit in 1977

It stated that different groups of shareholders (clientele) have different preferences for dividends depending on their level of income from other sources.

Low income earners prefer high dividends to meet their daily consumption while high income earners prefer low dividends to avoid payment of more tax. Therefore, when a firm sets a dividend policy, there"ll be shifting of investors into and out of the firm until an equilibrium is achieved. Low, income shareholders will shift to firms paying high dividends and high income shareholders to firms paying low dividends.

At equilibrium, dividend policy will be consistent with clientele of shareholders a firm has. Dividend decision at equilibrium are irrelevant since they cannot cause any shifting of investors.

vii) Agency theory

The agency problem between shareholders and managers can be resolved by paying high dividends. If retention is low, managers are required to raise additional equity capital to finance investment.Each fresh equity issue will expose the managers financing decision to providers of capital e.g bankers, investors, suppliers etc.Managers will thus engage in activities that are consistent with maximization of shareholders wealth by making full disclosure of their activities.
This is because they know the firm will be exposed to external parties through external borrowing.
Consequently, Agency costs will be reduced since the firm becomes self-regulating.
Dividend policy will have a beneficial effect on the value of the firm. This is because dividend policy can be used to reduce agency problem by **reducing agency costs**.The theory implies that firms adopting high dividend payout ratio will have a higher due to reduced agency costs.

How to pay dividends (mode of paying dividends)

1. Cash and Bonus issue
2. Stock split and reverse split
3. Stock repurchase
4. Stock rights/rights issue (to discuss in class)

1. Cash and bonus issue

For a firm to pay cash dividends, it should have adequate liquid funds.
However, under conditions of liquidity and financial constraints, a firm can pay stock dividend (Bank issue)
Bonus issue involves issue of additional shares for free (instead of cash) to existing shareholders in their shareholding proportion.
Stock dividend/Bonus issue involves capitalization of retained earnings and does not increase the wealth of shareholders. This is because R. Earnings is converted into shares.

Advantages of Bonus Issue

a) Tax advantages

Shareholders can sell new shares, and generate cash in form of capital gains which is tax exempt unlike cash dividends which attract 5% withholding tax which is final

b) Indication of high profits in future:

A Bonus issue, in an inefficient market conveys important information about the future of the company.
It is declared when management expects increase in earning to offset additional outstanding shares so that E.P.S is not diluted.

c) Conservation of cash

Bonus issue conserves cash especially if the firm is in liquidity problems.

d) Increase in future dividends

If a firm follows a fixed/constant D.P.S policy, then total future dividend would increase due to increase in number of shares after bonus issue.

Journal entry in case of bonus issue

	Dr.	R. Earnings (par value)
	Cr.	Ordinary share capital (par value)

NB: A firm can also make a script issue where bonus shares are directly from capital reserve.

2. Stock Split and Reverse Split

This is where a block of shares is broken down into smaller units (shares) so that the number of ordinary shares increases and their respective par value decreases at the stock split factor.

Stock split is meant to make the shares of a company more affordable by low income investors and increase their liquidity in the market.

Illustration

ABC Company has 1000 ordinary shares of Sh.20 par value and a split of 1:4 i.e one stock is split into 4. The par value is divided by 4.

1000 stocks x 4 = 4000 shares

par value = $\frac{40}{5}$ = Sh.5

Ordinary share capital = 4000 x 5 = Shs.20,000

A reverse split is the opposite of stock split and involves consolidation of shares into bigger units thereby increasing the par value of the shares. It is meant to attract high income clientele shareholders. E.g incase of 20,000 shares @ Shs.20 par, they can be consolidated into 10,000 shares of Shs.40 par. I.e. (20,000 x ½) = 10,000 and Sh.20 = x 2 = 40/=

3. Stock Repurchase

The company can also buy back some of its outstanding shares instead of paying cash dividends. This is known as **stock repurchase** and shares repurchased, (bought back) are called **treasury** Stock. If some outstanding shares are repurchased, fewer shares would remain outstanding.

Assuming repurchase does not adversely affect firm"s earnings, E.P.S. of share would increase. This would result in an increase in M.P.S. so that capital gain is substituted for dividends.

Advantages of Stock Repurchase

1. It may be seen as a true signal as repurchase may be motivated by management belief that firm"s shares are undervalued. This is true in inefficient markets.

2. Utilization of idle funds

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Companies, which have accumulated cash balances in excess of future investments, might find share reinvestment scheme a fair method of returning cash to shareholders.
Continuing to carry excess cash may prompt management to invest unwisely as a means of using excess cash.

Example

A firm may invest surplus cash in an expensive acquisition, transferring value to another group of shareholders entirely. There is a tendency for more mature firms to continue with investment plan even when E (K) is lower than cost of capital.

3. Enhanced dividends and E.P.S.

Following a stock repurchase, the number of shares issued would decrease and therefore in normal circumstances both D.P.S. and E.P.S. would increase in future. However, the increase in E.P.S is a bookkeeping increase since total earnings remaining constant.

4. Enhanced Share Price

Companies that undertake share repurchase, experience an increase in market price of the shares. This is partly explained by increase in total earnings having less and/or market signal effect that shares are under value.

5. Capital structure

A company"s managers may use a share buy back or requirements, as a means of correcting what they perceive to be an unbalanced capital structure.
If shares are repurchased from cash reserves, equity would be reduced and gearing increased (assuming debt exists in the capital structure).
Alternatively a company may raise debt to finance a repurchase. Replacing equity with debt can reduce overall cost of capital due to tax advantage of debt.

6. Employee incentive schemes

Instead of cancelling all shares repurchase, a firm can retain some of the shares for employees share option or profit sharing schemes.

7. Reduced take over threat

A share repurchase reduced number of share in operation and also number of „weak shareholders" i.e shareholders with no strong loyalty to company since repurchase would induce them to sell. This helps to reduce threat of a hostile takeover as it makes it difficult for predator company to gain control. (This is referred as a poison pill) i.e. Co."s value is reduced because of high repurchase price, huge cash outflow or borrowing huge long term debt to increase gearing

Disadvantages of stock repurchase

1. High price

A company may find it difficult to repurchase shares at their current value and price paid may be too high to the detriment of remaining shareholders.

2. Market Signaling

Despite director's effort at trying to convince markets otherwise, a share repurchase may be interpreted as a signal suggesting that the company lacks suitable investment opportunities. This may be interpreted as a sign of management failure.

3. Loss of investment income

The interest that could have been earned from investment of surplus cash is lost.

Factors to consider in paying dividends (factors influencing dividend)

1. Legal rules

a) Net purchase rule
States that dividend may be paid from company's profit either past or present.
b) Capital impairment rule: prohibits payment of dividends from capital i.e. from sale of ssets. This is liquidating the firm.
c) Insolvency rule: prohibits payment of dividend when company is insolvent. Insolvent company is one where assets are less than liabilities. Insolvent company is one where assets are less than liabilities. In such a case all earnings and assets of company belong to debt holders and no dividends is paid.

2. Profitability and liquidity

A company's capacity to pay dividend will be determined primarily by its ability to generate adequate and stable profits and cash flow.
If the company has liquidity problem, it may be unable to pay cash dividend and result to paying stock dividend.

3. Taxation position of shareholders

Dividend payment is influenced by tax regime of a country e.g in Kenya cash dividend are taxable at source, while capital are tax exempt**.**
The effect of tax differential is to discourage shareholders from wanting high dividends. (This is explained by tax differential theory).

4. Investment opportunity

Lack of appropriate investment opportunities i.e. those with positive returns (N.P.V.), may encourage a firm to increase its dividend distribution. If a firm has many investment opportunities, it will pay low dividends and have high retention.

5. Capital Structure

A company's management may wish to achieve or restore an optimal capital structure i.e. if they consider gearing to be too high, they may pay low dividends and allow reserves to accumulate until a more optimal/appropriate capital structure is restored/achieved.

6. Industrial Practice

Companies will be resistant to deviation from accepted dividend or payment norms within the industry.

7. Growth Stage

Dividend policy is likely to be influenced by firm"s growth stage e.g a young rapidly growing firm is likely to have high demand for development finance and therefore may pay low dividend or a defer dividend payment until company reaches maturity. It will retain high amount.

8. Ownership Structure

A dividend policy may be driven by Time Ownership Structure e.g in small firms where owners and managers are same, dividend payout are usually low.

However in a large quoted public company dividend payout are significant because the owners are not the managers. However, the values and preferences of small group of owner managers would exert more direct influence on dividend policy.

9. Shareholders expectation

Shareholder clientele that have become accustomed to receiving stable and increasing div. Will expect a similar pattern to continue in the future.

Any sudden reduction or reversal of such a policy is likely to dissatisfy the shareholders and may result in a fail in share prices.

10. Access to capital markets

Large, well established firms have access to capital markets hence can get funds easily
They pay high dividends thus, unlike small firms which pay low dividends (high retention) due to limited borrowing capacity.

11. Contractual obligations on debt covenants

They limit the flexibility and amount of dividends to pay e.g. no payment of dividends from retained earnings.

Dividend ratios

1. Dividend per shares (DPS) $= \frac{\text{Earnings to ordinary shareholders}}{\text{Number of ordinary shares}}$

   Indicate cash returns received fro every share holder.

2. Dividend yield (DY) $= \frac{\text{DPS}}{\text{MPS}}$

Indicate dividend returns for every shilling invested in the firm.

3. Dividend cover $= \frac{\text{DPS}}{\text{DPS}}$

Indicate the number of times dividends can be paid out of earnings of shareholders. The higher the DPS the lower the dividend cover.

4. Dividend Payout Ratio $= \frac{\text{DPS}}{\text{EPS}}$

Shows the proportion of Earnings which was paid out as dividends and how much was retained.

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REINFORCING QUESTIONS

QUESTION ONE

A comparative study of the records of two oil companies, A Ltd and B Ltd., in terms of their asset composition, capital structure and profitability shows that they have been very similar for the past five years. The only significant difference between the two firms is their dividend policy. A Ltd. maintains a constant dividend per share while B Ltd maintains a constant dividend pay-out ratio. Relevant data is as follows:

Year	Earnings per share	Dividend per share	Price range in stock exchange	Earnings per share	Dividend per share	Price range in stock exchange
	Shs.	Shs.	Shs.	Shs.	Shs.	Shs.
1996	1.89	0.45	16–18	2.05	0.35	11–15
1997	1.50	0.45	12–15	1.45	0.25	6-14
1998	2.00	0.45	14–20	2.07	0.36	7-16
1999	2.60	0.45	21–26	2.55	0.45	15–23
2000	3.90	0.45	26–40	4.08	0.69	21–44

Required

a) For each company, determine the dividend pay-out ratio and the price earnings ratio for each of the five years. (12 marks)

b) B Ltd"s management is surprised that the shares of this company have not performed as well as A Ltd."s in the stock exchange. What explanation would you offer for this state of affairs? (4 marks)

Comment on the applicability of the Simple Price/Earnings (P/E) ratio to the typical technology (IT) company with a high valuation and heavy losses. (4 marks)

QUESTION TWO

a) In relation to the financing of a firm, differentiate the following terms:

i) Financial structure from capital structure. (5 marks)
ii) Business risk from financial risk. (5 marks)

b) What is meant by gearing as used in the capital structure of Limited Liability Company? (2 marks)

The following information is on a company in the power generation business:

Shs.

10% preference shares (Sh.10 par)	400,000
Ordinary share capital (Sh.10 par)	400,000
	800,000
Retained profits	700,000
	1,500,000
15% debentures	1,200,000
	2,700,000

Required

i) Calculate the gearing ratio for the above company. (2 marks)

ii) If the company"s net profit (before interest and tax) is Sh.2,000,000,000 and assuming a dividend payout ratio of 60% of the earnings, compute the dividend per share (DPS).
(6 marks)

iii) If the market price per share now is Sh.80, compute the dividend yield.
(2 marks)
(Total: 22 marks)

QUESTION THREE

Explain the reasons why firms in the same industry with equal earnings and share capital would pay different amount of dividends?

CHECK YOUR ANSWERS WITH THOSE GIVEN IN LESSON 10OF THE STUDY PACK

COMPREHENSIVE ASSIGNMENT NO.3

TO BE SUBMITTED AFTER LESSON 8

To Be Carried Out Under Examination Condition and Sent to Distance learning Administrator for marking by the University

Answer All Questions **Time Allowed: Three Hours**

QUESTION ONE

The most recent balance sheet for Supremo Ltd is presented here below:

Supremo Ltd Balance Sheet – 30 November 1995

	Sh. „000"		Sh. „000"
Current Assets	8,800	Trade creditors	2,200
Fixed Assets (net)	13,200	Accrued expenses	2,200
		Current liabilities	4,400
		Long-term debt	8,800
		Ordinary shares	2,200
		Retained earnings	6,600
	22,000		22,000

The company is about to embark on an advertising campaign which is expected to raise sales from their present level of Sh.27.5 million to Sh.38.5 million by the end of next financial year. The firm is presently operating at full capacity and will have to increase its investment in both current and fixed assets to support the projected level of sales. It is estimated that both categories of assets will rise in direct proportion to the projected increase in sales.

For the year just ended, the firm"s net profits were 6% of the year"s sales but are expected to rise to 7% of projected sales. To help support its anticipated growth in assets needs next year the firm has suspended plans to pay cash dividends to its shareholders. In years past, a dividend of Sh.6.60 per share has been paid annually.

Supremo"s trade creditors and accrued expenses are expected to vary directly with sales. In addition, notes payable will be used to supply the added funds to finance next years operations that are not forthcoming from other sources.

Required

a) i)Estimate the amount of additional funds to be raised through notes payable. (4 marks)

ii) What one fundamental assumption have you made in making your estimate? (2 marks)

b) Prepare pro-forma balance sheet of Supremo Ltd. on 30 November 1996. (13 marks)

c) i)Calculate and compare Supremo Ltd."s current and debt ratios before and after growth in sales. (4 marks)

ii) What was the effect of the expanded sales on these two dimensions of Supremo"s financial condition? (2 marks)

(Total: 25 marks)

QUESTION TWO

XYZ Ltd is intending to raise capital to finance a new project. The current M.P.S is Sh.43 cum-div of year 2001 declared but not yet paid. For the past 5 years, the company has paid the following stream of dividends.

Year	1997	1998	1999	2000	2001
D.P.S	1.90	2.25	2.60	2.60	3.00

The existing capital structure of the firm is as follows:

	Sh.M
Ordinary share capital Sh.10 par	40
Retained earnings	35
12% Debenture Sh.100 par	25
	100

The debentures are currently selling at Sh.95 ex-interest. The corporate tax rate is 30%.

Required

a) Distinguish between cum-div and ex-div M.P.S. (4 marks)

b) Compute the ex-div M.P.S. (2 marks)

c) Compute the overall cost of capital. Use dividend growth model to determine the cost of equity. (9 marks)

d) The company wants to raise additional Sh.20 million as follows:

50% from retained earnings
30% from issue of debentures at the current market value
20% from issue of new ordinary shares with 10% floatation costs

i) Compute the number of ordinary shares to issue to raise the amount required. (2 marks)

ii) Compute the marginal cost of capital. (6 marks)

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QUESTION THREE

The Kitale Maize Mills is contemplating the purchase of a new high -speed grinder to replace an existing one. The existing grinder was purchased two years ago at an installed cost of Sh.300,000.

The grinder was estimated to have an economic life of 5 years but a critical analysis of its performance now shows it is usable for the next five years with no resale value.
The new grinder would cost Sh.525,000 and require Sh.25,000 in installation costs. It has a five year usable life. The existing grinder can currently be sold for Sh.350,000 without incurring any removal costs. To support the increased business resulting from purchase of the new grinder, accounts receivable would increase by Sh.200,000, inventories by Sh.150,000 and trade creditors by Sh.290,000. At the end of 5 years the new grinder would be sold to net Sh.145,000 after removal costs and before taxes. The company provides for 40% taxes on ordinary income. The estimated profit before depreciation and taxes over the five years for both machines are given as follows:

Year	Existing grinder **Shs.**	New grinder **Sh.**
1	130,000	215,000
2	120,000	215,000
3	110,000	215,000
4	100,000	215,000
5	90,000	215,000

The company uses straight line method of depreciation for both machines.

Required

a) Calculate the initial investment associated with the replacement of the existing grinder with the new one. Show your full workings. (6 marks)

b) Determine the incremental operating cash flows associated with the proposed grinder replacement. (14 marks)

c) Calculate the terminal cash flow expected from the proposed grinder replacement. (2 marks)

(Total: 22 marks)

QUESTION FOUR

Dereva and Makanga are considering purchasing the new 30 passenger "wonder coach" to engage in transport business. They have two alternatives of financing the purchase as shown below:

First alternative

Purchase the vehicle whose current price is Sh.2,400,000 through a finance lease from Kenya Matatu Finance Company Limited. The terms of the lease will require four equal payments per year for each of the three years. No deposit is required.

Second alternative

Obtain the vehicle through Mwananchi"s Bank loan scheme being advertised in the papers. Dereva and Makanga will be required to make a down payment of Sh.900,000 and then meet four equal yearly payments of Sh.153,436 each for the three years.
The market rate of interest is currently 16 per cent per annum.

Dereva and Makanga have been informed that as part of your social responsibility, you provide free consultancy services to small scale businessmen.

Required

a) The finance lease payment to be made by Dereva and Makanga if they opt for finances from Kenya Matatu Finance Company Limited. (4 marks)

b) The present value of the payment scheme of Mwananchi Bank. (4 marks)

c) The interest expense charged by Kenya Matatu Finance Company Limited on the third instalment. (6 marks)

Give reasons why finance leases are referred to as "off-balance sheet" finance. (4 marks)

e) i) Which of the two alternatives – Finance Lease or Bank Loan scheme is better in financial terms? (2 marks)

ii) Give one reason why the better alternative may not necessarily be chosen by persons in Dereva and Makanga"s circumstances. (2 marks)

(Total: 22 marks)

QUESTION FIVE

You are provided with the following information about Marco. Ltd.

i) Number of issued ordinary shares 250,000
ii) Market price per ordinary share Shs.37.50
iii) Total earnings for the year Sh.5,000,000 (before tax).
iv) Rate of corporation tax 30%
v) The total ordinary dividend will be 25% of the earnings for the year after tax.
vi) Preference dividend will be Sh.300,000

From the above information, calculate:

i) Earnings per share
ii) Dividend yield
iii) Earnings yield
iv) Price earnings ratio (P/E) ratio
v) Dividend cover.

END OF COMPREHENSIVE ASSIGNMENT 3
NOW SEND TO DISTANCE LEARNING FOR MARKING

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LESSON EIGHT

WORKING CAPITAL MANAGEMENT

INSTRUCTIONS

- Read Chapters 22, 23, 24 and 25 of Financial Management text book by I. M Pandey.
- Complete answers to **reinforcement** questions at the end of the lesson.
- Check model answers given in lesson 10 of the study pack.
- Reinforcing Comments

CONTENTS

- Introduction
- Financing of Working Capital /Current Assets
- Determinants of Working Capital needs
- Importance of working capital management
- Management of Short term investment
- Working capital cycle
- Management of cash , stock and Accounts Receivable

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WORKING CAPITAL

a) Working capital (also called gross working capital) refers to current assets.
b) Net working capital refers to current assets minus current liabilities.
c) Working capital management refers to the administration of current assets and current liabilities.

- Target levels of each category of current assets
- How current assets will be financed

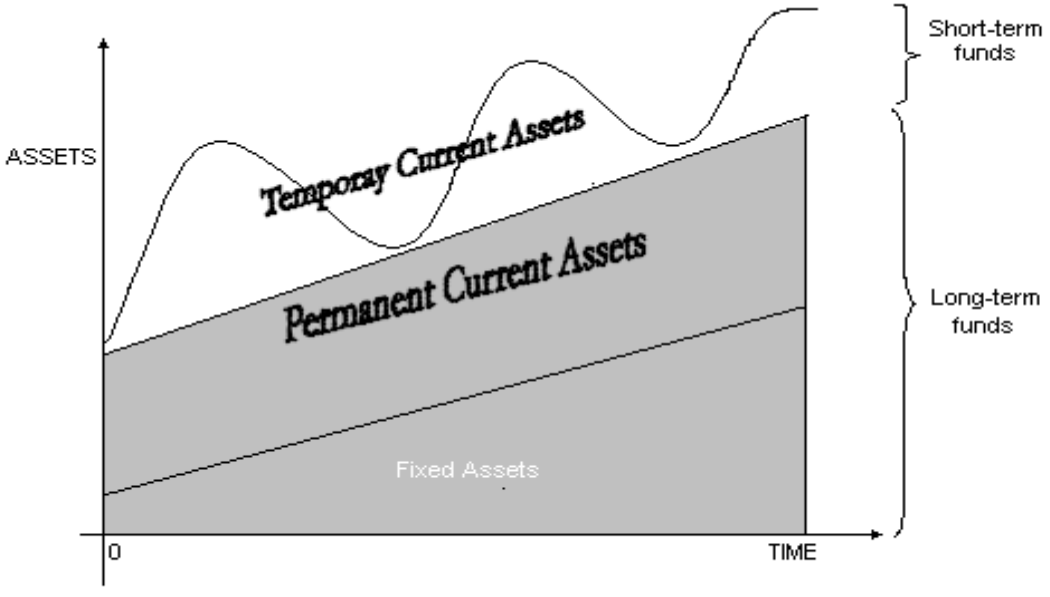
d) Liquidity management involves the planned acquisition and use of liquid resources over time to meet cash obligations as they become due. The firm"s liquidity is measured by liquidity ratio such as current ratio, quick (or acid test) ratio, cash ratio, etc.

FINANCING CURRENT ASSETS

Current Assets require financing by use of either current funds or long term funds. There are three major approaches to financing current assets. These are:

a) Matching Approach

This approach is sometimes referred to as the hedging approach. Under this approach, the firm adopts a financial plan which involves the matching of the expected life of assets with the expected life of the source of funds raised to finance assets.
The firm, therefore, uses long term funds to finance permanent assets and short-term funds to finance temporary assets.
Permanent assets refer to fixed assets and permanent current assets. This approach can be shown by the following diagram.



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b) Conservative Approach

An exact matching of asset life with the life of the funds used to finance the asset may not be possible. A firm that follows the conservative approach depends more on long-term funds for financing needs. The firm, therefore, finances its permanent assets and a part of its temporary assets with long-term funds. This approach is illustrated by the following diagram. Risk-Return trade-off of the three approaches:
It should be noted that short-term funds are cheaper than long-term funds. (Some sources of short-term funds such as accruals are cost-free). However, short-term funds must be repaid within the year and therefore they are highly risky. With this in mind, we can consider the risk-return trade off of the three approaches.

The conservative approach is a low return-low risk approach. This is because the approach uses more of long-term funds which are now more expensive than short -term funds. These funds however, are not to be repaid within the year and are therefore less risky.
The aggressive approach on the other hand is a highly risky approach. However it is also a high return approach the reason being that it relies more on short-term funds that are less costly but riskier.
The matching approach is in between because it matches the life of the asset and the life of the funds financing the assets.

DETERMINANTS OF WORKING CAPITAL NEEDS

There are several factors which determine the firm"s working capital needs. These factors are comprehensively covered by A Textbook of Business Finance by Manasseh (Pages 403 – 406). They however include:

a) Nature and size of the business.
b) Firm"s manufacturing cycle
c) Business fluctuations
d) Production policy
e) Firm"s credit policy
f) Availability of credit
g) Growth and expansion activities.

IMPORTANCE OF WORKING CAPITAL MANAGEMENT

The finance manager should understand the management of working capital because of the following reasons:

a) Time devoted to working capital management

A large portion of a financial manager"s time is devoted to the day to day operations of the firm and therefore, so much time is spent on working capital decisions.

b) Investment in current assets

Current assets represent more than half of the total assets of many business firms. These investments tend to be relatively volatile and can easily be misappropriated by the firm"s employees. The finance manager should therefore properly manage these assets.

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c) Importance to small firms

A small firm may minimise its investments in fixed assets by renting or leasing plant and equipment, but there is no way it can avoid investment in current assets. A small firm also has relatively limited access to long term capital markets and therefore must rely heavily on short-term funds.

d) Relationship between sales and current assets

The relationship between sales volume and the various current asset items is direct and close. Changes in current assets directly affects the level of sales. The finance management must therefore keep watch on changes in working capital items.

CASH AND MARKETABLE SECURITIES MANAGEMENT

The management of cash and marketable securities is one of the key areas of working capital management. Since cash and marketable securities are the firm"s most liquid assets, they provide the firm with the ability to meet its maturing obligations.

Cash refers to cash in hand and cash on demand deposits (or current accounts). It therefore excludes cash in time deposits (which is not immediately available to meet maturing obligations).

Marketable securities are short -term investments made by the firm to obtain a return on temporary idle funds. Thus when a firm realises that it has accumulated more cash than needed, it often puts the excess cash into an interest-earning instrument. The firm can invest the excess cash in any (or a combination) of the following marketable securities.

a) Government treasury bills
b) Agency securities such as local governments securities or parastatals securities
c) Banker"s acceptances, which are securities, accepted by banks
d) Commercial paper (unsecured promissory notes)
e) Repurchase agreements
f) Negotiable certificates of deposits
g) Eurocurrencies etc.

CASH CYCLE AND CASH TURNOVERS

Cash Cycle refers to the amount of time that elapses from the point when the firm makes a cash outlay to purchase raw materials to the point when cash is collected from the sale of finished goods produced using those raw materials.
Cash turnover on the other hand refers to the frequency of a firm"s cash cycle during a year.

Illustration

XYZ Ltd. currently purchases all its raw materials on credit and sells its merchandise on credit. The credit terms extended to the firm currently requires payment within thirty days of a purchase while the firm currently requires its customers to pay within sixty days of a sale. However, the firm on average takes 35 days to pay its accounts payable and the average collection period is 70 days. On average, 85 days elapse between the point a raw material is purchased and the point the finished goods are sold.

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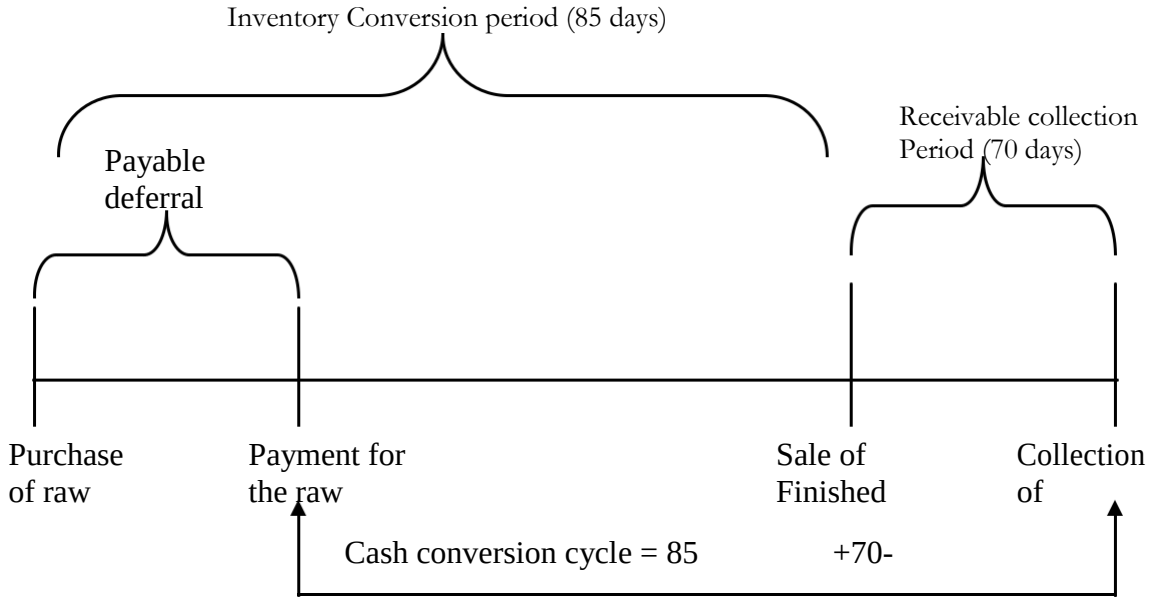
Required

Determine the cash conversion cycle and the cash turnover.

Solution

The following chart can help further understand the question:



The cash conversion cycle is given by the following formula:

Cash conversion = Inventory conversion + Receivable collection – Payable deferral
Cycle period period period

For our example:

Cash conversion cycle = 85 + 70 – 35 = 120 days

$$\text{Cash turnover} = \frac{360}{\text{Cash conversion cycle}}$$

$$= \frac{360}{120}$$

= 3 times

Note also that cash conversion cycle can be given by the following formulae:

$$\textit{Cash conversion cycle} = 360\left[\frac{\text{inv entory}}{\text{costof sale}} + \frac{\text{receiv ables}}{\text{sales}} - \frac{\text{Pay ables+ Accruals}}{\text{Cashoperatingexpense}}\right]$$

NB: In this chapter we shall assume that a year has 360 days.

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SETTING THE OPTIMAL CASH BALANCE

Cash is often called a non-earning asset because holding cash rather than a revenue-generating asset involves a cost in form of foregone interest. The firm should therefore hold the cash balance that will enable it to meet its scheduled payments as they fall due and provide a margin for safety. There are several methods used to determine the optimal cash balance. These are:

a) The Cash Budget

The Cash Budget shows the firm"s projected cash inflows and outflows over some specified period. This method has already been discussed in other earlier courses. The student should however revise the cash budget.

b) Baumol's Model

The Baumol"s model is an application of the EOQ inventory model to cash management. Its assumptions are:

1. The firm uses cash at a steady predictable rate
2. The cash outflows from operations also occurs at a steady rate
3. The cash net outflows also occur at a steady rate.

Under these assumptions the following model can be stated:

$$C^* = \sqrt{\frac{2bT}{i}}$$

Where: **C*** is the optimal amount of cash to be raised by selling marketable securities or by borrowing.

b is the fixed cost of making a securities trade or of borrowing

T is the total annual cash requirements

i is the opportunity cost of holding cash (equals the interest rate on marketable securities or the cost of borrowing)

The total cost of holding the cash balance is equal to holding or carrying cost plus transaction costs and is given by the following formulae:

$$TC = \frac{1}{2} Ci + C\frac{T}{} b$$

Illustration

ABC Ltd. makes cash payments of Shs.10,000 per week. The interest rate on marketable securities is 12% and every time the company sells marketable securities, it incurs a cost of Shs.20.

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Required

a) Determine the optimal amount of marketable securities to be converted into cash every time the company makes the transfer.
b) Determine the total number of transfers from marketable securities to cash per year.
c) Determine the total cost of maintaining the cash balance per year.
d) Determine the firm"s average cash balance.

Solution

a) $C^* \sqrt{\frac{2bT}{i}}$

Where: b = Shs.20
T = 52 x 20,000 = Shs.520,000
i = 12%

$C^* = \sqrt{\frac{2x20x520,000}{0.12}} = Sh.13,166$

Therefore the optimal amount of marketable securities to be converted to cash every time a sale is made is Sh.13,166.

b) Total no. of transfers $= \frac{T}{C^*}$

$= \frac{520,000}{13,166}$

$= 39.5$

$\approx$ 40 times

c) $TC = \frac{1}{2} Ci + C^T b$

$= \frac{13,166x0.12}{2} + \frac{520,000x20}{13,166}$

= 790 + 790 = Shs.1,580

Therefore the total cost of maintaining the above cash balance is Sh.1,580.

d) The firm"s average cash balance = ½C

$= \frac{13,166}{2}$

= Shs.6,583

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c) Miller-Orr Model

Unlike the Baumol"s Model, Miller-Orr Model is a stochastic (probabilistic) model which makes the more realistic assumption of uncertainty in cash flows.

Merton Miller and Daniel Orr assumed that the distribution of daily net cash flows is approximately normal. Each day, the net cash flow could be the expected value of some higher or lower value drawn from a normal distribution. Thus, the daily net cash follows a trendless random walk.

From the graph below, the Miller-Orr Model sets higher and lower control units, H and L respectively, and a target cash balance, Z. When the cash balance reaches H (such as point A) then H-Z shillings are transferred from cash to marketable securities. Similarly, when the cash balance hits L (at point B) then Z-L shillings are transferred from marketable securities cash.

The Lower Limit is usually set by management. The target balance is given by the following formula:

$$Z = \left[\frac{3B\delta^2}{4i}\right]^{1/3} + L$$

and the highest limit, H, is given by:

$$H = 3Z - 2L$$

$$\text{The average cash balance} = \frac{4Z - L}{3}$$

Where: Z = target cash balance
H = Upper Limit
L = Lower Limit
b = Fixed transaction costs
i = Opportunity cost on daily basis
δ^2 = variance of net daily cash flows

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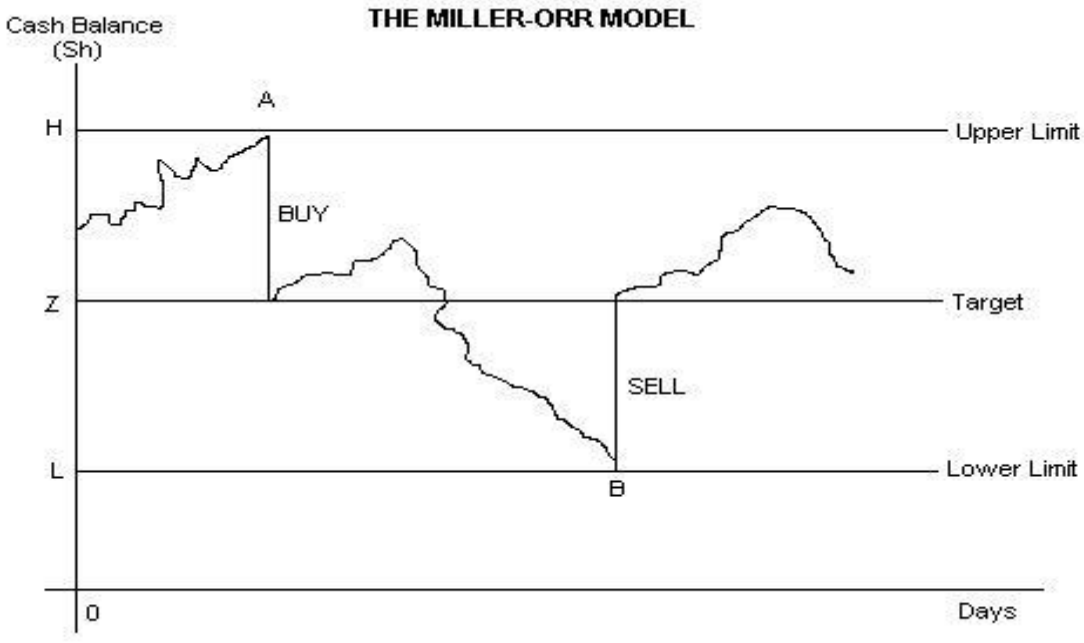

Illustration

XYZ"s management has set the minimum cash balance to be equal to Sh.10,000. The standard deviation of daily cash flow is Sh.2,500 and the interest rate on marketable securities is 9% p.a. The transaction cost for each sale or purchase of securities is Sh.20.

Required

a) Calculate the target cash balance
b) Calculate the upper limit
c) Calculate the average cash balance
d) Calculate the spread

Solution

a) $$Z = \left\lfloor \frac{3b\delta^2}{4i} \right\rfloor^{1/3} + L$$

$$= \left\lfloor \frac{3x20x(2,500)^2}{4x\frac{9\%}{360}} \right\rfloor + 10,000$$

$$= 7,211 + 10,000 = \text{Sh.}17,211$$

b) $H = 3Z - 2L$

$= 3 \times 17,211 - 2(10,000)$

$= \underline{\text{Shs.}31,633}$

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c) Average cash balance $= \frac{4Z - L}{3}$

$= \frac{4x17{,}211 - 10{,}000}{3}$

d) The spread $= H - L$
$= 31{,}633 - 10{,}000$
$= \underline{\text{Shs.21,633}}$

Note: If the cash balance rises to 31,633, the firm should invest Shs.14,422 (31,633 – 17,211) in marketable securities and if the balance falls to Shs.10,000, the firm should sell Shs.7,211(17,211 – 10,000) of marketable securities.

Other Methods

Other methods used to set the target cash balance are The Stone Model and Monte Carlo simulation. However, these models are beyond the scope of this manual.

CASH MANAGEMENT TECHNIQUES

The basic strategies that should be employed by the business firm in managing its cash are:

i) To pay account payables as late as possible without damaging the firm"s credit rating. The firm should however take advantage of any favourable cash discounts offered.
ii) Turnover inventory as quickly as possible, but avoid stockouts which might result in loss of sales or shutting down the „production line".
iii) Collect accounts receivable as quickly as possible without losing future sales because of high pressure collection techniques. The firm may use cash discounts to accomplish this objective.

In addition to the above strategies the firm should ensure that customer payments are converted into spendable form as quickly as possible. This may be done either through:

a) Concentration Banking
b) Lock-box system.

a) Concentration Banking

Firms with regional sales outlets can designate certain of these as regional collection centre. Customers within these areas are required to remit their payments to these sales offices, which deposit these receipts in local banks. Funds in the local bank account in excess of a specified limit are then transferred (by wire) to the firms major or concentration bank. Concentration banking reduces the amount of time that elapses between the customer"s mailing of a payment and the firm"s receipt of such payment.

b) Lock-box system.

In a lock-box system, the customer sends the payments to a post office box. The post office box is emptied by the firm"s bank at least once or twice each business day. The bank opens the payment envelope, deposits the cheques in the firm"s account and sends a deposit slip indicating the payment received to the firm. This system reduces the customer"s mailing time and the time it takes to process the cheques received.

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MANAGEMENT OF INVENTORIES Manufacturing

firms have three major types of inventories:

1. Raw materials
2. Work-in-progress
3. Finished goods inventory

The firm must determine the optimal level of inventory to be held so as to minimize the inventory relevant cost.

BASIC EOQ MODEL

The basic inventory decision model is Economic Order Quantity (EOQ) model. This model is given by the following equation:

$$Q = \sqrt{\frac{2DC_o}{Cn}}$$

Where: Q is the economic order quantity
D is the annual demand in units
C_o is the cost of placing and receiving an order
C_n is the cost of holding inventories per unit per order

The total cost of operating the economic order quantity is given by total ordering cost plus total holding costs.

$$TC = \tfrac{1}{2}QCn + \frac{D}{Q} Co$$

Where: Total holding cost = $\tfrac{1}{2}QC_n$

Total ordering cost = $\frac{D}{Q} Co$

The holding costs include:

1. Cost of tied up capital
2. Storage costs
3. Insurance costs
4. Obsolescence costs

The ordering costs include:

1. Cost of placing orders such as telephone and clerical costs
2. Shipping and handling costs

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Under this model, the firm is assumed to place an order of Q quantity and use this quantity until it reaches the reorder level (the level at which an order should be placed). The reorder level is given by the following formulae:

$$R=\frac{D}{360}L$$

Where: R is the reorder level
D is the annual demand
L is the lead time in days

EOQ ASSUMPTIONS

The basic EOQ model makes the following assumptions:

i) The demand is known and constant over the year
ii) The ordering cost is constant per order and certain
iii) The holding cost is constant per unit per year
iv) The purchase cost is constant (Thus no quantity discount)
v) Back orders are not allowed.

Illustration

ABC Ltd requires 2,000 units of a component in its manufacturing process in the coming year which costs Sh.50 each. The items are available locally and the leadtime in one week. Each order costs Sh.50 to prepare and process while the holding cost is Shs.15 per unit per year for storage plus 10% opportunity cost of capital.

Required

a) How many units should be ordered each time an order is placed to minimize inventory costs?
b) What is the reorder level?
c) How many orders will be placed per year?
d) Determine the total relevant costs.

Suggested Solution:

a) $$Q=\sqrt{\frac{2DC_o}{C_n}}$$

Where: D = 2,000 units
C_o = Sh.50
C_n = Sh.15 + 10% x 50 = Sh.20
L = 7 days

$$Q=\sqrt{\frac{2x2,000x50}{20}}=100\text{units}$$

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b) $R = \frac{DL}{360}$

$= \frac{2{,}000 \times 7}{360}$

$= \underline{\underline{39 \text{ units}}}$

c) No. of orders $= \frac{D}{Q}$

$= \frac{2{,}000}{100}$

$= \underline{\underline{20 \text{ orders}}}$

d) $TC = \frac{1}{2}QCn + \frac{D}{Q}Co$

$= \frac{1}{2}(100)(20) + \frac{2{,}000}{100}(50)$

$= 1{,}000 + 1{,}000$

$= \underline{\underline{Sh.2{,}000}}$

Under the basic EOQ Model the inventory is allowed to fall to zero just before another order is received.

EXISTENCE OF QUANTITY DISCOUNTS

Frequently, the firm is able to take advantage of quantity discounts. Because these discounts affect the price per unit, they also influence the Economic Order Quantity.

If discounts exists, then usually the minimum amount at which discount is given may be greater than the Economic Order Quantity. If the minimum discount quantity is ordered, then the total holding cost will increase because the average inventory held increases while the total ordering costs will decrease since the number of orders decrease. However, the total purchases cost will decrease.

Illustration

Consider illustration one and assume that a quantity discount of 5% is given if a minimum of 200 units is ordered.

Required

Determine whether the discount should be taken and the quantity to be ordered.

Suggested Solution

We need to consider the saving in purchase costs; savings in ordering costs and increase in holding costs.

Savings in purchase price:

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New purchase price	=	50 x 95% = Sh.47.50 per unit
Savings in purchase price per unit	=	50 – 47.50
	=	Sh.2.50
Total units per year	=	2,000
Total savings	=	2,000 x 2.50 = Sh.5,000

Savings in Ordering Cost

Assuming an order quantity of 200 units per order, the total ordering cost will be:

$\frac{2,000}{100}(50) = Sh.500$

Ordering cost if 100 units is ordered

$\frac{2,000}{100}(100) = Sh.1,000$

Therefore savings in ordering costs = 1,000 – 500 = Sh.500

Increase in holding costs

Holding cost if 200 units are ordered

½(200)19.75 = Sh.1,975

holding costs if 100 units are ordered

½(100(20) = Sh.1,000

Increase in holding costs = 1,975 – 1,000 = Sh.975

The Net Effect therefore:

	Shs.
Savings in purchases costs	5,000
Savings in ordering costs	500
Total savings	5,500
Less increase in holding costs	975
Net savings	4,525

$$Q_d = \sqrt{\frac{2DC_o}{Cn}}$$

$$Q_d = \sqrt{\frac{2x2,000x50}{19.75}}$$

C_n = 15 + 10% x 4.75 = Shs.19.75

The discount should be taken because the net savings is positive. To determine the number of units to order we recomputed Q with discount Q_d.

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= 100.6 units

Decision rule:

If Q_d < minimum discount quantity, then order the minimum discount quantity.
If Q_d < minimum discount quantity, then order Q_d.

UNCERTAINTY AND SAFETY STOCKS

Usually demand requirements may not be certain and therefore the firm holds safety stock to safeguard stock out cases. The existence of safety stock can be illustrated by Figure 5.7.

The safety stock guards against delays in receiving orders. However, carrying a safety stock has costs (it increases the average stock).

Illustration

Consider illustration one and assume that management desires to hold a minimum stock of 10 units (this stock is in hand at the beginning of the year).

Required

a) Determine the re-order level
b) Determine the total relevant costs

Suggested solution

a) $R = \frac{DL}{360} + S$

Where: S is the safety stock

$= \frac{2,000}{360} \times 7 + 10$

$= \underline{\underline{49 \text{ units}}}$

b) The average inventory $= \frac{1}{2}Q + S$

$TC = (\frac{1}{2}Q + S)C_n + D/QC_o$

$= [\frac{1}{2}(100) + 10]20 + \frac{2,000}{100}(50)$

$= 1,200 + 1,000$

$= \underline{\underline{\text{Shs.}2,200}}$

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MANAGEMENT OF ACCOUNT RECEIVABLE

In order to keep current customers and attract new ones, most firms find it necessary to offer credit. Accounts receivable represents the extension of credit on an open account by a firm to its customers. Accounts receivable management begins with the decision on whether or not to grant credit.

The total amount of receivables outstanding at any given time is determined by:

a) The volume of credit sales
b) The average length of time between sales and collections.

Accounts receivables = Credit sales per day x Length of collection period

The average collection period depends on:

a) Credit standards which is the maximum risk of acceptable credit accounts
b) Credit period which is the length of time for which credit is granted
c) Discount given for early payments
d) The firm"s collection policy.

a) CREDIT STANDARDS

A firm may follow a lenient or a stringent credit policy. The firm following a lenient credit policy tends to sell on credit to customers on a very liberal terms and credit is granted for a longer period. A firm following a stringent credit policy on the other hand, sell on credit on a highly selective basis only to those customers who have proven credit worthiness and who are financially strong.

A lenient credit policy will result in increased sales and therefore increased contribution margin. However, these will also result in increased costs such as:

1. Increased bad debt losses
2. Opportunity cost of tied up capital in receivables
3. Increased cost of carrying out credit analysis
4. Increased collection cost
5. Increased discount costs to encourage early payments

The goal of the firm"s credit policy is to maximise the value of the firm. To achieve this goal, the evaluation of investment in receivables should involve the following steps:

1. Estimation of incremental operating profits from increased sales
2. Estimation of incremental investment in account receivable
3. Estimation of incremental costs
4. Comparison of incremental profits with incremental costs

b) CREDIT TERMS

Credit terms involve both the length of the credit period and the discount given. The terms 2/10, n/30 means that a 2% discount is given if the bill is paid before the tenth day after the date of invoice otherwise the net amount should be paid by the 30th day.
In considering the credit terms to offer the firm should look at the profitability caused by longer credit and discount period or a higher rate of discount against increased cost.

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c) DISCOUNTS

Varying the discount involves an attempt to speed up the payment of receivables. It can also result in reduced bad debt losses.

d) COLLECTION POLICY

The firm"s collection policy may also affect our analysis. The higher the cost of collecting account receivables the lower the bad debt losses. The firm must therefore consider whether the reduction in bad debt is more than the increase in collection costs.

As saturation point increased expenditure in collection efforts does not result in reduced bad debt and therefore the firm should not spend more after reaching this point.

Illustration

Riffruff Ltd is considering relaxing its credit standards. The firms current credit terms is net 30 but the average debtors collection period is 45 days. Current annual credit sales amounts to Sh.6,000,000. The firm wants to extend credit period net 60. Sales are expected to increase by 20%. Bad debts will increase from 2% to 2.5% of annual credit sales. Credit analysis and debt collection costs will increase by Sh.4,000 p.a. The return on investment in debtors is 12% for Sh.100 of sales, Sh.75 is variable costs. Assume 360 days p.a. Should the firm change the credit policy?

Suggested Solution

Current sales			=	Sh.6,000,000		
New sales	=	Sh.6,000,000 x 1.20	=	Sh.7,200,000		
Contribution margin	=	Sh.100 – Sh.75	=	Sh.25		
Therefore contribution margin ratio		=	$\frac{Sh.25}{Sh.100} x100$	=	25%	
Cost benefit analysis						
Contribution Margin						
New policy		25% x 7,200,000	=	1,800		
Current policy		25% x 6,000,000	=	1,500	=	300
Credit analysis and debt collection costs						(84)
Bad debts						
New bad debts	=	2.5% x 7,200,000	=	180		
Current bad debts	=	2% x 6,000,000	=	120		(60)

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Debtors

New debtors = $\frac{\text{Cr.per iod}}{360\text{days}}$ x cr. Sales p.a.

= $\frac{60}{360}$ x7,200,000 = 1,200

Current debtors = $\frac{45}{360}$ x6,000,000 = 750

Increase in debtors (tied up capital) 450

Forgone profits = 12% x 450 (54)

Net benefit (cost) 102

Therefore, change the credit policy.

EVALUATION OF THE CREDIT APPLICANT

After establishing the terms of sale to be offered, the firm must evaluate individual applicants and consider the possibilities of bad debt or slow payments. This is referred to as credit analysis and can be done by using information derived from:

a) The applicant"s financial statement
b) Credit ratings and reports from experts
c) Banks
d) Other firms
e) The company"s own experience

APPLICATION OF DISCRIMINANT ANALYSIS TO THE SELECTION OF APPLICANTS

Discriminative analysis is a statistical model that can be used to accept or reject a prospective credit customer. The discriminant analysis is similar to regression analysis but it assumed that the observations come from two different universal sets (in credit analysis, the good and bad customers). To illustrate let us assume that two factors are important in evaluating a credit applicant the quick ratio and net worth to total assets ratio.

The discriminant function will be of the form.

$f_i = a_1(X_1) + a_2(X_2)$

Where: X_1 is quick ratio
X_2 is the network to total assets
a_1 and a_2 are parameters

The parameters can be computed by the use of the following equations:

$$a_1 = \frac{Szz\ dx - Sxzdz}{Sxx\ Sxx - Sxz^2}$$

$$a_2 = \frac{Szz\ dx - Sxzdz}{Szz\ Sxx - Sxz^2}$$

Where: Sxx represents the variances of X_1

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Szz represents the variances of X_2
Sxz is the covariance of variables of X_1 and X_2
d_x is the difference between the average of X_1"s bad accounts and X_2"s good accounts
d_z represents the difference between the average of X"s bad accounts and X"s good accounts.

The next step is to determine the minimum cut-off value of the function below at which credit will not be given. This value is referred to as the discriminant value and is denoted by f^*.

Once the discriminant function has been developed it can then be used to analyse credit applicants. The important assumption here is that new credit applicants will have the same characteristics as the ones used to develop the mode.

More than two variables can be used to determine the discriminant function. In such a case the discriminant function will be of the form.

$$f_i = a_1X_1 + a_2X_2 + \ldots + a_nX_n$$

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REINFORCING QUESTIONS

QUESTION ONE

Wema Ltd has estimated that the standard deviation of its daily net cash flows is Sh.2,500. The firm pays Sh.50 in transaction costs to transfer funds into and out of this money market. The rate of interest in the money market is 7.465% p.a. Wema uses the Miller-Orr **Model to set its target cash balances.**

Required

a) What is Wema"s target cash balance?
b) What are the lower and upper cash limit?
c) What are the Wema"s decision rules?
d) Determine Wema"s expected average cash balance.

QUESTION TWO

Mama Star Enterprises is a distributor or air filters to retail shops. It buys its filters from several manufacturers. Filters are ordered in lot sizes of 100 and each order costs Sh.400 to place. Demand from retail shops is 200,000 filters per month and the carrying cost is Sh.10 per filter per month.

Required

a) What is the optimal order quantity with respect to so many lot sizes"
b) If a safety stock of 2,000 filters is desired what is the total relevant costs?
c) A certain manufacturer offers a discount of 2% for purchases of 50 lot sizes or more. Should the discount be taken? (Assume that each filter costs Sh.100).

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QUESTION THREE

Willie Distributors Ltd. uses discriminant analysis in customer classification. A good customer is defined as one who pays on or before the due date while a bad customer is one who does not meet this standard.

The finance director believes that the two most important ratios in discriminating between a good and bad customer are the current ratio and the returns on investment (i.e. Earnings Before Interest and taxes divided by total assets), Y.

Data relating to 20 accounts (consisting of 10 good and 10 bade) is shown below:

Good accounts		Bad accounts	
1.1	13	0.7	11
1.5	15	0.9	-4
1.2	15	0.8	6
0.9	21	1.3	2
1.6	7	1.1	6
2.2	8	0.5	8
0.9	16	0.3	8
1.0	13	1.4	6
1.3	8	0.9	3
1.3	2	1.1	14

Required

Estimate the discriminant function using the above data.

Use the discriminant function to find the Z score for each of the twenty accounts
Determine a Z score that minimises the number of misclassifications.

(CPA pilot paper)

QUESTION FOUR

a) Explain why proper working capital management is important for the financial success of a company.

b) At a recent seminar on "Gender Empowerment in Business" the invited financial consultant, Madame Hesabu Advised the participants that extending credit is one of the comerstone of modern business. Madame Biashara, the managing director of Biashara Limited took note of this important fact. After the seminar, she authorised a review of the credit system of her company. The following facts are relevant.

(8 marks)

a) Annual sales of the company are Sh.5,000,000
b) Credit sales are 25 per cent of all sales
c) Bad debts average 2% of all credit sales
d) Average collection period for debtor is 40 days
e) The company"s cost of capital is 14 per cent per annum
f) Net profit on sales is 15 per cent.

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Based on these facts, she is recommending a thorough revamping of the credit policy of the company. The expected outcome of this action will be:

a) Increase in total sales by 30 per cent
b) Credit sales will be 40 per cent of all sales
c) Average collection period will decrease to 35 days
d) Bad debts will increase to 3 per cent of credit sales
e) An additional part time credit control assistant will be hired for Sh.50,000 per annum.

Required

The effectiveness or otherwise of the proposed revamping of credit policy. (Show all your workings). (8 marks)
Who should determine credit policy? (2 marks)
(Total: 18 marks)

Check your answers with those given in Lesson 10 of the Study Pack

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LESSON NINE

MARKET FOR FUNDS

INSTRUCTIONS

- Read the notes provided below.
- Complete answers to **reinforcement** questions at the end of the lesson.
- Check model answers given in lesson 10 of the study pack.
- Reinforcing Comments

This chapter looks at the structure of financial markets in Kenya. The money and securities markets will be discussed.

CONTENTS

- Definitions
- Kenya Financial System
- Financial Intermediaries
- The stock exchange /market
- Stock market Terminologies
- Factors influencing share prices
- Stock Market index
- Timing of Investment at the stock exchange
- Advatages and Disadvatages of listing
- Regulation of Capital Markets-The Capital market Authority
- Recent development – The Central Depository Systems (CDS)
- Specialized and development financial Institutions

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Market for Funds and Financial Institutions in Kenya

- Financial markets refers to an elaborate system of the financial institution and intermediaries and arrangement put in place and developed to facilitate the transfer of funds from surplus economic units (savers) to deficit economic units (investors).
- Savers include individuals, small businesses, family units savings through institutions such as SACCOs, banks, insurance firms, pension schemes etc.
- Investors include government, companies, family units etc.

Note

Physical or commodity markets deal with real assets such as tea, coffee, wheat, automobile etc.

Functions of Financial Markets/Institutions in the Economy

1. Distribution of financial resources to the most productive units. Savings are transferred to economic units that have channels of alternative investments. (Link between buyers and sellers).
2. Allocation of savings to real investment.
3. Achieving real output in the economy by mobilizing capital for investment.
4. Enable companies to make short term and long term investments and increase liquidity of shares.
5. Provision of investment advice to individuals through financial experts.
6. Enables companies to raise short term and long term capital/funds
7. Means of pricing of securities e.g N.S.E. index shares indicate changes in share prices.
8. Provide investment opportunities. Savers can hold financial instrument for investment made.

Kenya Financial System

Financial markets are broadly classified into 2:

1. Capital Markets
2. Money Markets

e.g. commercial banks, SACCOS, foreign exchange market, merchant banks etc.

Capital markets are sub-divided into 2:

a) Security markets e.g stock exchange dealing with instruments such as shares, debentures etc.
b) Non-security/instrument market e.g mortgage, capital leases, security market is sub-divided into 2.

- Primary market
- Secondary market

CAPITAL MARKET

These are markets for long term funds with maturity period of more than one year. E.g of Financial instruments used here are debentures, terms, loans, bonds, warrants, preference shares, ordinary shares etc.

The capital market serves as a way of allocating the available capital to the most efficient users.
Capital market financial institution includes:

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1. Stock exchange
2. Development bank
3. Hire purchase companies
4. Building societies
5. Leasing firms

Functions of Capital Markets are:

a) Providing long term funds which are necessary for investment decisions.
b) Provide advice to investors as to which investments are viable.
c) Long term investments are made liquid, as the transfer between shareholders is facilitated.
d) Facilitates the international capital inflow.
e) Facilitating the liquidation and marketing of a long term
f) Acting as a channel through which foreign investments find their way into the market.

Money/discount markets

- Are discount and acceptance financial institutions
- This is a market for S.T funds maturing in one year. Money market works through financial institutions. It facilitates transfer of capital between savers and users.
- The transfer can be direct (from saver to investor) and indirectly through an intermediary).
- Foreign exchange market is also part of money market.
- The money market or discount market is the market for short term loans.

Financial Instruments in Money market include:

1. Commercial paper
2. Treasury bills
3. Bills of exchange
4. Promissory notes
5. Bank overdrafts
6. Bankers certificate of deposit

These instruments are sold by commercial banks, merchant banks, discounting houses, acceptance houses, and government.

Primary Markets

These are markets that deal with securities that have been issued for the first time. The money flows directly from transferor (saver of money) to transferee (investing person). They facilitate capital formation.

Economic Advantage of Primary Markets

1. Raising capital for business.
2. Mobilising savings
3. Government can raise capital through sale of Treasury bonds
4. Open market operation to effect monetary policy of the government i.e control of excess liquidity in the economy
5. It is a vehicle for direct foreign investment.

Economic Advantage/Role of Secondary Markets in the Economy

1. It gives people a chance to buy shares hence distribution of wealth in economy.

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2. Enable investors realize their investments through disposal of securities.
3. Increases diversification of investments
4. Improves corporate governance through separation of ownership and management. This increases higher standards of accounting, resource management and transparency.
5. Privatisation of parastatals e.g. Kenya Airways. This gives individuals a chance for ownership in large companies.
6. Parameter for health economy and companies
7. Provides investment opportunities for companies and small investors.

Types of Stock Markets

1. Organised Exchange and Over the Counter (OTC) market

This is where the buying and selling of securities is done by buyers and sellers are not present but only the agents (brokers) internet. This system is called "open outcry".

2. Over the Counter Market (OTC)

Provides an opportunity for unlisted/unquoted firms to sell their security
Otc is usually organized by the dealers or stock brokers who buy securities themselves and then sell them.
They maintain a reasonable balance between demand and supply and observe price movements to determine profit margins on sale.
Trading may be done through telephones, computer networks, fax etc.
The dealers/participants set the treading rulesOTC specialize in securities such as corporate bonds, equity securities, Treasury bonds etc.
OTC is underdeveloped in Kenya.

Features of OTC Markets

1. Prices are relatively low
2. Usually deal with new securities of firms
3. Is composed of small and closely held firms.

FINANCIAL INTERMEDIARIES

These are institutions which mediate/link between the savers and investors:

Examples of financial intermediaries in Kenya.

1. Commercial Banks.

They act as intermediary between savers and users (investment) of funds.

2. Savings and Credit Associations

These are firms that take the funds of many savers and then give the money as a loan in form of mortgage and to other types of borrowers. They provide credit analysis services.

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3. Credit Unions

These are cooperative associations whose members have a common bond e.g employees of the same company. The savings of the member are loaned only to the members at a very low interest rate e.g. SACCOS charge p.m interest on outstanding balance of loan.

4. Pension Funds

These are retirement schemes or plans funded by firms or government agencies for their workers. They are administered mainly by the trust department of commercial banks or life insurance companies. Examples of pension funds are NSSF, NHIF and other registered pension funds of individual firms.

5. Life Insurance Companies

These are firms that take savings in form of **annual premium** from individuals and them invest, these funds in securities such as shares, bonds or in real assets. Savers will receive annuities in future.

6. Brokers

These are people who facilitate the exchange of securities by linking the buyer and the seller. They act on behalf of members of public who are buying and selling shares of quoted companies.

7. Investment Bankers

These are institutions that buy new issue of securities for resale to other investors.

They perform the following functions:

1. Giving advice to the investors
2. Giving advice to firms which wants to
3. Valuation of firms which need to merge
4. Giving defensive tactics incase of forced takeover
5. Underwriting of securities.

THE STOCK EXCHANGE MARKET

The Idea and Development of a Stock Exchange

Stock exchange (also known as stock markets) are special "market places" where already held stocks and bonds are bought and sold. They are, in effect, a financial institution, which provides the facilities and regulations needed to carry out such transactions quickly, conveniently and lawfully. Stock exchanges developed along with, and are an essential part of the free enterprises system. (No stock exchanges exist in the communist world outside Hong Kong and Macao – which have special status, and Taiwan which is also claimed by China).
The need for this kind of market came about as a result of two major characteristics of joint stock company (Public Limited Company), shares.

1. First of all, these shares are irredeemable, meaning that once it has sold them, the company can never be compelled by the shareholder to take back its shares and give back a cash refund, unless and until the company is winding up and liquidates.

2. The second characteristic is that these shares are, however, very transferable and can be bought and resold by other individuals and organizations, freely, the only requirement being the filling and signing of a document known as a share transfer form by the previous

shareholder. The document will then facilitate the updating of the issuing companies shareholders register.

These two characteristics of joint company shares brought about the necessity for an organized and centralized place where organizations and private individuals with money to spare (investors), and satisfy their individual needs. Stock exchanges were the result emerging to provide a continuous auction market for securities, with the laws of supply and demand determining the prices.

Functions of the Nairobi Stock Exchange

The basic function of a stock exchange is the raising of funds for investment in long-term assets. While this basic function is extremely important and is the engine through which stock exchanges are driven, there are also other quite important functions.

1. The mobilization of savings for investment in productive enterprises as an alternative to putting savings in bank deposits, purchase of real estate and outright consumption.
2. The growth of related financial services sector e.g. insurance, pension and provident fund schemes which nature the spirit of savings.
3. The check against flight of capital which takes place because of local inflation and currency depreciation.
4. Encouragement of the divorcement of the owners of capital from the managers of capital; a very important process because owners of capital may not necessarily have the expertise to manage capital investment efficiently.
5. Encouragement of higher standards of accounting, resource management and public disclosure which in turn affords greater efficiency in the process of capital growth.
6. Facilitation of equity financing as opposed to debt financing. Debt financing has been the undoing of many enterprises in both developed and developing countries especially in recessionary periods.
7. Improvement of access to finance for new and smaller companies. This is futuristic in most developing countries because venture capital is mostly unavailable, an unfortunate situation.
8. Encouragement of public floatation of private companies which in turn allows greater growth and increase of the supply of assets available for long term investment.

There are many other less general benefits which stock exchanges afford to. Individuals, corporate organizations and even the government. The government for example could raise long term finance locally by issuing various types of bond through the stock exchange and thus be less inclined to foreign borrowing.
Stock exchanges, especially in developing countries have not always played the full role in economic development.

THE ROLE OF STOCK EXCHANGE IN ECONOMIC

DEVELOPMENT 1. Raising Capital for Businesses

The Stock Exchange provides companies with the facility to raise capital for expansion through selling shares to the investing public.

2. Mobilising Savings for Investment

When people draw their savings and invest in shares, it leads to a more rational allocation of resources because funds which could have been consumed, or kept in idle deposits with banks are mobilized and redirected to promote commerce and industry.

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3. Redistribution of Wealth

By giving a wide spectrum of people a chance to buy shares and therefore become part-owners of profitable enterprises, the stock market helps to reduce large income inequalities because many people get a chance to share in the profits of business that were set up by other people.

4. Improving Corporate Governance

By having a wide and varied scope of owners, companies generally tend to improve on their management standards and efficiency in order to satisfy the demands of these shareholder. It is evident that generally, public companies tend to have better management records than private companies.

5. Creates Investment Opportunities for Small investors

As opposed to other business that require huge capital outlay, investing in shares is open to both the large and small investors because a person buys the number of shares they can afford. Therefore the Stock Exchange provides an extra source of income to small savers.

6. Government Raises Capital for Development Projects

The Government and even local authorities like municipalities may decide to borrow money in order to finance huge infrastructural projects such as sewerage and water treatment works or housing estates by selling another category of shares known as Bonds. These bonds can be raised through the Stock Exchange whereby members of the public buy them. When the Government or Municipal Council gets this alternative source of funds, it no longer has the need to overtax the people in order to finance development.

7. Barameter of the Economy

At the Stock Exchange, share prices rise and fall depending, largely, on market forces. Share prices tend to rise or remain stable when companies and the economy in general show signs of stability. Therefore their movement of share prices can be an indicator of the general trend in the economy.

Advantages of Investing In Shares

1. Income in form of dividends

When you have shares of a company you become a part-owner of that company and therefore you will be entitled to get a share of the profit of the company which come in form of dividends. Furthermore, dividends attract a very low withholding tax of 5% only.

2. Profits from Capital Appreciation

Shares prices change with time, and therefore when prices of given shares appreciate, shareholders could take advantage of this increase and set their shares at a profit. Capital gains are not taxed in Kenya.

3. Share Certificate can be used as a Collateral

Share certificate represents a certain amount of assets of the company in which a shareholder has invested. Therefore this certificate is a valuable property which is acceptable to many banks and financial institutions as security, or collateral against which an investor can get a loan.

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4. Shares are easily transferable

The process of acquiring or selling shares is fairly simple, inexpensive and swift and therefore an investor can liquidate shares at any moment to suit his convenience.

5. Availability of Investment Advice

Although the stick market may appear complex and remote to many people. Positive advise and guidance could be provided by the stockbrokers and other investment advisors. Therefore, an investor can still benefit from trading in shares even though he may not be having the technical expertise relevant to the stock market.

6. Participating in Company Decisions

By buying shares and therefore becoming a part-owner in an enterprise, a shareholder gets the right to participate in making decisions about how the company is managed. Shareholders elect the directors at the Company"s Annual.
General meetings, whereby the voting power is determined by the number of shares an investor holds since the general rules is that one share is equal to one vote.

STOCK MARKET TERMINOLOGY

1. BROKER

- A dealer at the market who buys and sells securities on behalf of the public investors.
- He is an agent of investors
- He is the only authorized person to deal with the quoted securities. He is authorized by CMA and NSE
- He obtains the suitable deal for his clients/investors, gives financial advice and charges commission for his services.
- He doesn"t buy or sell shares in his own right hence he cannot be a market marker.
- He must maintain standards set by the stock exchange.

2. JOBBERS/SPECULATORS

- This is a dealer who trades in securities in his own right as a principal.
- He can set prices and activate the market through his own buying and selling hence he is a market maker.
- He engages in speculation and earns profit called Jobbers" turn (selling price – buying price).
- He does not deal with members of the public unlike brokers. However, brokers can buy and sell shares through jobbers.

There are 3 types of jobbers

a) Bulls

- A jobber buy shares when prices are low and hold them in anticipation that the price will rise and sell them at gain.
- When a market is dominated by bulls (buyers predominate sellers), it is said to be bullish. The share prices are generally rising.
- Therefore the market is characterized by an upward trend in security prices.
- It signifies investors confidence/optimism in the future of economy.

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b) Bears

- A speculator/jobber who sells security on expectation of decline in prices in future.
- The intention is to buy same securities at lower prices in future thereby making a gain.
- When market is dominated by bears (sellers predominate buyers) it is said to be bearish.
- It is characterized by general downward trend in share prices. It signifies investors pessimism about the future prospects of the economy.

c) Stags

- This is a jobber found in primary markets
- He buys new securities offered to the public and believes that they are undervalued.
- He believes the price will rise and sell them at a gain to the ultimate investors
- Stags are vital because they ensure full subscription of the share issue.

3, Underwriting

- This is the assumption of risk relating unsubscribed shares
- When new shares are issued, they may be underwritten/unsubscribed. A merchant banker agrees, under a commission to take up any shares not bought by the public.
- They therefore ensure that all new issues are successful
- Underwriters are very important in pry markets and play the following roles:
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- Advice firms on most suitable issue price
- Ensure shares are fully subscribed by taking up all unsubscribed shares
- Advice the firms on where to source funds to finance floatation costs.

4. Blue Chips

- Are first class securities of firms which have sound share capital and are internationally reputable.
- They have very good dividend record and are highly demanded in the markets. Individuals holding such securities are reluctant to sell them because of their high value.

5. Going short or long on a share

- This is the process of selling (going short) or buying (going long) on a share that one does not have/own
- The aim is to make gain from assumed change in the market value of shares
- This practice is not allowed in Kenya

- It is aided by brokers in countries where it is practiced
- Investors going short or long are required to pay a premium called margin on the transaction.

TRADING MECHANISM AT NSE

1. An investor approaches a broker who takes his bid/offer to the trading floor.
2. At the trading floor, the buying and selling brokers meet and seal the deal.
3. The investor is informed of what happened/transpired at the trading floor through a contract note. The note is sent to buying and selling investors.

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The note contains details such as:

- Number of shares bought or sold
- Buying/selling price
- Charges/commission payable etc.

4. Settlement is made through the brokers.
5. Old share certificate is cancelled (for selling investor) and a new one is issued in the name of buying investor.

Factors to Consider when Buying Shares of a Company

1. Economic conditions of the country and other non-economic factors e.g. unfavourable climatic conditions and diseases which may lead to low productivity and poor earnings.
2. State of management of the company e.g are the B.O.D. and key management personnel of repute? They should be trusted and run the company honestly and successfully.
3. Nature of the product dealt in and its market share e.g is the product vulnerable to weather conditions? Is it subject to restrictions?
4. Marketability of the shares – how fast or slowly can the shares of the firm be sold?
5. Diversification i.e does the company have a variety of operations e.g multi-products so that if one line of business declines, the other increases and the overall position is profitable.
6. Company"s trading partners (local and abroad) and its competitors.
7. Prospects of growth of the firm due to expected growth in demand of products of the firm.

Note
Stock broker can give all the above advice when buying shares.

Factors Affecting/Influencing Share Prices

All sorts of influences affect share prices. These influences include:

1. The recent profit record of the company especially the recent dividend paid to shareholders and the prospects of their growth and stability.
2. The growth prospects of the industry in which the company operates.
3. The publication of a company"s financial results i.e. Balance Sheet and profit and loss statement.
4. The general economic conditions situations e.g boom and recession e.g during boom, firms would have high profits hence rise in prices.
5. Change in company"s management e.g entry and exit of prominent corporate personalities.
6. Change on Government economic policy e.g spending, taxes, monetary policy etc. These changes influence investors" expectations.
7. Rumour and announcements of impending political changes eg. General elections and new president will cause anxiety and uncertainty and adversely affect share prices.
8. Rumours and announcement of mergers and take-over bids. If the shareholders are offered generous terms/prices in a take-over, share prices could rise.
9. Industrial relations eg strikes and policies of other firms.
10. Foreign political developments where the economy heavily depends on world trade.
11. Changes in the rate of interest on Government securities such as Treasury Bills may make investors switch to them. Exchange rates will also encourage or discourage foreign investment in shares.
12. Announcement of good news eg that a major oil field has been struck or a major new investment has been undertaken. The NPV of such investment would be reflected in share prices.

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13. The views of experts e.g articles by well-known financial writers can persuade people to buy shares hence pushing the prices up.
14. Institutional buyers such as insurance companies can influence share prices by their actions.
15. The value of assets and the earnings from utilization of such assets will also influence share prices.

STOCK MARKET INDEX

Definition

An index is a numerical figure which measures relative change in variables between two periods.

Examples

If sales in year 2000 are equal to Kshs.25 M and for year 2001 Shs.30 M, the sales index would be as follows:

$$\text{Sales index} = \frac{\text{year 2001 sales}}{\text{Year 2000 sales}} = \frac{\text{Shs.30 M}}{\text{Shs.25 M}} \times 100 = 120$$

Year 2001 sales are 120% of year 2000 sales, year 2000 is called **Base year.**

A stock index therefore measures relative changes in prices or values of shares. The NSE has its base year as 1966. 20 companies constitute the index.

The stock index is computed using Geometric mean (G.M) as follows:

$$\text{Todays stock index} = \frac{(\text{Today"s share price G.M})^2}{\text{Yesterday"s share price G.M.}} \times 100$$

$$\text{Where G.M} = \sqrt[n]{P_1 x\ P_2 x\ P_3 x\ P_4 x \ldots\ldots x\ P_n}$$

Where G.M. $P_1 \times P_2 \times P_3 \times P_4$ ------- P_n = share price of companies that constitute stock index.

N = number of companies

- When stock prices are rising, stock market index will rise and vice versa.
- Stock market index therefore is an indicator of investors confidence in the economy.

Illustration

The following 6 companies constitute the index of democratic republic of Kusadikika.

Company	A	B	C	D	E	F
Today"s share price	20	52	83	12	78	100
Yesterday"s share price	25	53	83	10	75	96

Compute the stock market index for today.

In construction/computation of stock index the following should be considered:

1. Choice of base year on which to base the price changes

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2. The selection of representative securities/firms
3. Combining the securities/firms to construct the index eg use of geometric mean
4. Use of suitable weight to be attached to the securities depending on their relative importance.
5. The weights/number of firms in a sector is kept constant over a reasonably long period.

LEVEL OF TRADING ACTIVITIES IN THE NAIROBI STOCK EXCHANGE

The activities in NSE are normally low due to:

1. Few Listed companies
2. Economy is made up of small firms which are family owned or sole proprietorship.
3. Level of awareness among the population is low
4. Few instruments traded
5. Low dividend payout to those already holding shares.

STOCK EXCHANGE INDEX (SEI)

Stock Exchange Index is a measure of relative changes in prices of stocks from one period to another indices.

Nairobi Stock Exchange 20 - share Index (20 companies) (Daily basis) Stanchart Index - From 25 most active companies in a given period (weekly basis) Computation of price index.

Uses of Stock Exchange Index

1. To gauge price (wealth movement in the stock market
2. To assess overall returns in the market portfolio
3. To assess performance of specific portfolio using SEI as a benchmark.
4. May be used to predict future stock prices
5. Assist in examining and identifying the factors that underlie the price movements.

Limitations/Drawback of NSE index

1. The 20 companies sample whose share prices are used to compute the index are not true representatives.
2. The base year of 1996 is too far in the past
3. New companies are not included in the index yet other firms have been suspended/deregistered e.g. ATH, KFB etc.
4. Dormant firms – Some of the 20 firms used are dormant or have very small price changes.
5. Thinness of the market – small changes in the active shares tend to be significantly magnified in the index
6. The weights used and the method of computation of index may not give a truly representative index.

When is a share price said to be unfair?

- Where the price is not determined by demand and supply forces.
- If the price is not consistent with the activities of the firm e.g a decline in share price of a firm with very good growth prospects.
- Price is not compatible with the price of other similar shares of firms in the same industry
- If there is insider trading:

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This situation arises where individuals within the firm in privileged positions e.g top management and director take advantage of the information available to them which has not been released to the public.
They may use such information to dispose off share to make capital gains or avoid capital loss

Example – where individuals (insiders) are aware that a firm has made a loss in a year and such information, if released to the public, would cause a crash on share price, the information may be leaked to certain people who could sell the shares in advance.

TIMING OF INVESTMENT A STOCK EXCHANGE

The ideal way of making profits at the stock exchange is to buy at the bottom of the market (lowest M.P.S) and sell at the top of the market (highest M.P.S). The greatest problem however is that no one can be sure when the market is at its bottom or at its top (prices are lowest and highest).

Systems have been developed to indicate when shares should be purchased and when they should be sold. These systems are **Dow theory** and **Hatch system.**

1. Dow Theory

This theory depends on profiting of secondary movement of prices of a chart. The principal objective is to discover when there is a change in the primary movement.
This is determined by the behaviour of secondary movement but tertiary movements are ignored.
Eg in a bull market, the rise of prices is greater than the fall of prices.
In a bear market the opposite is the case ie the fall is greater than the rise
In a bear market, the volume of the business being done at a certain stage can also be used to interpret the state of the market.

Basically, it is maintained that if the volume increases along with rising prices, the signs are bullish and if the volume increases with falling prices, they are bearish.

2. Hatch System

This is an automatic system based on the assumption that when investors sell at a certain % age below the top of the market and buys at a certain percent above the market bottom, they are doing as well as can reasonably be expected. This system can be applied to an index of a group of shares or shares of dividends companies eg Dow Jones and Nasdaq index of America.

Illustration 1

An investor uses the hatch system to determine when to buy and sell his shares. He sells the shares when prices are 15% less of the top price and buy the shares when prices are 15% less of the top price and buy the shares when prices are 15% more of the bottom price. At the beginning of January, the share price was 200/=. At the end of the year the share price was Shs.320.

i) Determine the buying and selling price of the shareholders
ii) If the shareholder had 10,000 shares, determine the amount of capital gain on these shares.
iii) The investor had D.P.S of 3.00 at the end of the year. Compute his shilling return in %.

Rules for floatation of new shares on NSE

1. The company must have an issued share capital of at least Kshs.20 M.
2. The company must have made profits during the last 3 years.

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3. At least 20% of issued capital (capital to be issued) should be offered to the public
4. The firm must issue a prospectus which will give more information to investors to enable them to make informed judgement
5. The market price of the companies share must be determined by the market forces of demand and supply
6. The company should be registered under Cap. 486 with registrar of companies.

Note

- A prospectus is a legal document issued by a company wishing to raise funds from the public through issue of shares or bonds.
- It is prepared by directors of the company and submitted to CMA and NSE for approval
- The CMA has issued rules relating to the design and contents of the prospectus, in addition to those contained in the Companies Act.

It must provide details on

1. Number of shares to be issued
2. Offer/issue price per share
3. The dates during which the other is valid or open
4. Financial statements of the firm showing EPS and DPS for the last 5 years
5. Action report etc.
6. Action may be taken against the directors if the prospectus is fraudulent.

The Advantages and Disadvantages of a Listing

Advantages

1. It facilitates the issue of securities to raise new finance, making a company less dependent upon retained earnings and banks.
2. The wider share ownership which results will increase the likelihood of being able to make rights issues.
3. The transfer of shares becomes easier. Less of a commitment is necessary on the part of shareholders. For this reason the shares are likely to be perceived as a less risky investment and hence will have a higher value.
4. The greater marketability and hence lower risk attached to a market listing will lead to a lower cost of equity and also to a weighted average cost of capital.
5. A market-determine price means that shareholders will know the value of their investment at all times.
6. The share price can be used by management as an indicator of performance, particularly since the share price is forward looking, being based upon expectations, whilst other objectives measures are backward looking.
7. The shares of a quoted company can be used more readily as consideration in takeover bids.
8. The company may increase its standing by being quoted and it may obtain greater publicity.
9. Obtaining a quotation provides an entrepreneur with the opportunity to realize part of his holding in a company.

Disadvantages

1. The cost of obtaining a quotation is high, particularly when a new issue of shares is made and the company is small. This is because substantial costs are fixed and hence are relatively greater for small companies. Also, the annual cost of maintaining the quotation may be high

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due to such things as increased disclosure, maintaining a larger share register, printing more annual reports, etc.

2. The increased disclosure requirements may be disliked by management.
3. The market-determined price and the greater accountability to shareholders that comes with its concerning the company"s performance may not be liked by management.
4. Control of a particular group of shareholders may be diluted by allowing a proportion of shares to be held by the public.
5. There will be a greater likelihood of being the subject of a takeover bid and it may be difficult to defend it with wide share ownership.
6. Management conditions, management employees give themselves more salaries due to prosperity obtained.

CAPITAL MARKET AUTHORITY (CMA)

Was established in 1990 by an Act of Parliament ot assist in creation of a conducive environment for growth and development of capital markets in Kenya.

ROLE OF CMA

1. To remove bottlenecks and create awareness for investment in long term securities
2. To serve as efficient bridge between the public and private sectors
3. Create an environment which will encourage local companies to go public
4. To grant approvals and licences to brokers
5. To operate a compensation fund to protect investors from financial losses should licenced brokers fail to meet their contractual obligation
6. Act as a watchdog for the entire capital market system
7. To establish operational rules and regulations on placement of securities
8. To implement government programs and policies with respect to the capital markets.

Note

Apart from the above roles, CMA can undertake the following steps to encourage development of stock exchanges in Kenya or other countries.

1. Removal of Barriers on security transfers
2. Introduce wider range of instruments in the market
3. Decentralization of its operations
4. Encourage development of institutional investors such as pension funds, insurance firms etc.
5. Provide adequate information to players in the market in order to prevent insider trading
6. Licence more brokers.

Role of CMA in determination of share prices

1. The CMA does not in any way influence share price of quoted companies.
2. The prices of such securities is determined by the demand and supply mechanism
3. However, CMA may:
4. Advice the company on the issue price of new securities
5. Alert the investors if it feels that the issue price of certain securities is not in their interest
6. It guards against manipulation of share prices and insider trading.

Other Terminologies

1. ACCOUNTS 14 day periods into which the stock exchange trading calendar **is divided**.

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2. ACCOUNTS DAY Sixth or seventh day following the expiry of an accounts period on which settlement on all period deals **must be completed.**

3. BACKWARDATION Where stock cannot be delivered on settlement date although it has been paid for, a third party is found who owns and will lend similar stock. As a security measure, this stock is paid for in full. When the original stock that could not be delivered on time is finally available, the lender will be given back his stock and will refund monies paid to him less backwardation which **is a commission** for the loan.

4. BONUS SHARES Additional shares issued to shareholders at no additional cost to themselves as a form of extra dividend. Also known as scrip issue.

5. CALL-OVER Bargaining and closing deals in a stock exchange without a formal floor and position dealings, where the secretary reads, calls out each security to be dealt, one at a time.

6. CARRY-OVER When a deal has been arranged but, for some valid reason, either the buyer cannot pay on time, or the Jobber may not be able to deliver stock on time. In this case, a third party can be introduced to solve the problem.

7. CONTANGO Is interest charged a client by his broker to cover the costs of borrowing money from a third party so as to pay for stock bought on his behalf. This happens when a client has commissioned his broker to purchase securities but for some reason, cannot pay on time.

8. CUM. AND EX. hese prefixes are written in front of other words such as capital, rights and dividends to qualify them. "Cum" is short for cumulative, which means "inclusive of". "Ex" on the other hand is short for excluding, which is the opposite of including.

In commerce these terms refer to rights of buyers and sellers of securities when these are sold before a dividend has been effected but after it has been declared. These terms are necessitated
by the fact that shares are bought and sold throughout the year, but companies only declare dividends after the end of their financial year when profits can be determined, and moreover, payment of dividends may take place long after they have been declared.

Thus "Ex Capital" infers that the seller of shares has sold them **excluding** their right to receive a **bonus share** issue which has been declared at the time of sale. "Cum Capital" then means he sells them inclusive of this right.
Ex Rights Cum Rights: The Term "Rights" refers to the decision by the directors to raise new share capital at current market rates but to give a prior option to existing shareholders to purchase a fixed number of shares at preferential rates below market values. Ex and Cum proceeding it refers to the sale of shares decision, but before the dividend.
Cum Dividend: These terms simply mean that the seller of shares retain his right to receiving the dividend on the shares he sells although the title to the shares has passed to the buyer reserve:

P.S. "Cum" anything shares give the buyer above par value because his purchase comes inclusive of the rights to collect on prior earnings. They are therefore sold at higher prices than "Ex" shares.

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9. FLOOR Loose term referring to the trading area of a stock exchange. This encompasses all the position dealings or "markets" of the exchange.

10. GILT-EDGED SECURITIES These are loan securities that are issued by Governments and because they are backed by the Governments "continuity", they are considered perfectly safe, giving regular periodic interest payments, a fixed rate of interest, and guaranteed capital redemption at the expiry of the loan term eg Treasury bonds.

P.S.
Similar securities issued by public corporations are called bonds, if they are issued by public companies they are called debentures.

CENTRAL DEPOSITORY SYSTEM (C.D.S)

It"s a computerized ledger system that enable the holding or transfer of securities without the need for physical movement. The ownership of security or shares is through a book entry instead of physical exchange CDS is for security what a bank is for cash transfer between banks. Eg A and B are 2 shareholders of XYZ Ltd. XYZ Ltd. does not need to deliver the share certificate to A or B but a ledger account for both shareholders would be maintained at the CDS. Their accounts will be credited with the number of shares. If A want to sell shares to B the CDS will debit A"s account and credit B"s account.

Advantages of CDS

1. It shortens the registration process in the stock exchange i.e. high speed of registering shareholders.
2. It improves the liquidity of stock exchange than increase the turnover of the equity shares in the market.
3. It will lower the clearing and settlement cost eg no need to prepare share certificates and seal them (putting a seal).
4. Its faster and less risky settlement of securities which make the market more attractive for investors e.g instances of fraud will be reduced since there is no physical share certificate which may be forged.
5. There will be improved and timely communication between company and the investors hence reduced delay in receiving dividends and right issues and improve information dissemination concerning a company.
6. It will lead to an efficient and transparent securities market to adhere to International Standards for the benefit of all stakeholders.

Functions of CDS

1. Immobilisation of securities ie elimination of physical movement of securities.
2. Dematerialisation i.e elimination of physical certificates or documents showing entitlement to a security so that ownership exists only as computer records.
3. Effective Delivery Vs. payment (DVP) ie simultaneous delivery and payment between the 2 parties exchanging or transferring securities. This can be done without delay if CDS is linked to the central payment clearing system e.g CBK.
4. Provision of detailed listings of investors according to the type of securities they hold e.g ordinary shares, preference shares.
5. Effective Distribution of Dividends, interests, rights issues and bonus issues.
6. Provision of book entry account ie electronic exchange of ownership of securities and payment of cash.

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Parties Involved In CDS

1. Government

For the purpose of attracting foreign investors and supporting the infrastructure of capital markets.

2. Capital Market Authority

To improve the transparency of market and reduce instances of fraud.

3.Nairobi Stock Exchange

Bear transactions costs and improve liquidity of the market investors.

4. Investors

Institutions, private investors and market professionals. For faster settlements and ownership transfer and reduced cost of transfer through reduced paper work and labour intensive activities.

5. Brokers

Reduces paper work, forgery and improved efficiency

6. Banks

Ease of clearing and settling of payments.

Development Banks And Specialised Financial Institutions

There are some sectors in the economy that may not secure adequate funds from commercial banks for various reasons.

a) May take a long time to realize returns
b) High risk associated with such sectors
c) unattractive/low return
d) Uncertainty or highly volatile returns
e) Require heavy investment in infrastructure

These sectors include:

- Tourism
- Rural housing
- Agriculture
- Rural enterprise
- Small commercial businesses e.g Jua Kali etc.
- Such sector e.g agriculture and tourism are essential for a balanced economic growth and development.

The government has thus established financial institutions to cater specifically for these otherwise unattractive but essential sector. They include:

1. Industrial development bank (IDB) – give loans for industrial development in Kenya.
2. Development Finance Company of Kenya (DFCK) – To finance various project will spur economic development and create employment.

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3. cKenya Industrial Estate (KIE) – this is a branch of Industrial and Commercial development cooperation (ICDC) dealing with industrial development.
4. Agriculture Finance Co-operation (AFC)
5. Post Bank – To mobilize rural savings
6. National Housing Cooperation – for development of houses to ensure shelter for everyone.
7. Kenya Tourism Development Cooperation (KTDC) for promotion of Tourism in Kenya.

Advantages/Functions/Case for Development Financial Institutions

1. They provide venture capital
2. They provide facilities for large lending
3. They provide technical expertise and support emerging projects transferable from other sectors of development economies.
4. They are risk capital providers in areas which are not attractive to commercial banks and other major lenders due to risk involved.
5. They carry out feasibility study to evaluate viability of projects.

Case against Specialized Institutions and Development Banks

1. They are being phased out by Globalisation and liberalization where needy sectors can easily get expertise from outside.
2. Commercial banks have now matured up to provide capital for all sectors.
3. They were only useful during periods of foreign exchange restriction
4. They are risk capital providers in areas which are not attractive to commercial banks and other major lenders due to risk involved.
5. They increase government spending.

BANKING INSTITUTIONS

The Central Bank

This is a bank which is entrusted with the responsibility of maintaining economic stability and financial soundness of a country. It is therefore entrusted with two objectives:

1. Responsibility of maintaining financial soundness of the economy. The
2. bank has therefore to identify gaps in financial markets and to seek
3. solutions to these gaps.
4. To act as a commercial bank. It therefore has to operate profitability
5. when offering services to difference parties.

Establishment of Central Bank of Kenya

Established by Central Banking Act, 1966, and the Banking Act 1968.

Management of the Bank

Management and policy entrusted to a Board of Directors, comprising of seven members including the Governor, Deputy Governor, and Ps to treasury. The Governor of the Central Bank is the executive head of the bank. The Governor in charge today is Michael Cheserem.

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Statutory Information and Accounts

The bank is required to publish a return of its assets and liabilities every month. A copy of the return to be submitted to Finance Minister. The bank has also to prepare and publish an annual report within 3 months of the end of fiscal year. Fiscal year ends 30th June.

Central Banks

Functions of Central Bank

1. Banker to the government
2. Lender to the government
3. Ensure Economic stability
4. Printing of currency notes
5. Lender of last resort

Tools Used To Control The Level Of Money In Circulation

1. Monetary policies e.g Treasury bills, Treasury bonds, Reserve ratio etc
2. Fiscal policies e.g taxation

Commercial Banks

These are financial institutions that accept deposits of money from the general public, safeguard the deposits and make them available to their owners when need arises.

Establishment

Established under the Banking Act 1968.

Functions of Commercial Banks

1. Accepting deposits
2. Collecting money on behalf of customers and credit this money in customers accounts
3. Transferring of money from individual accounts to another persons accounts through credit transfer.
4. Supply currency - foreign currency obtainable at commercial bank.
5. Lending money, the banks lend loans to customers from which they earn interest.
6. Facilitate International Trade - issue letters of credit and undertake foreign exchange transactions on behalf of their customers.
7. Act as trustees and executives of wills if one wants to make a will he/she writes one and appoints a commercial bank as the trustee and executor of the bill.
8. Provision of safer keeping of valuables like title deeds, gold, certificates.
9. Making decision affecting development. Before advancing loan to a prospective customer, commercial banks are very careful and strict so as to give loans to invest in viable sector of the economy.
10. Provision of saves for keeping money and other valuables over night.

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Other Financial Institutions

1. Mortgages

An arrangement where the property being purchased provides the security for funding. Other assets may be used as security for funding of another asset.

Features

1. Mortgagor and mortgagee agree on a long term financing arrangement
2. Financing relates to acquisition of specific asset
3. Mortgagor provides a contribution which is paid up-front.
4. Repayment is over a specified long term period.
5. Interest rate is stated with provision for variations of the determination of the finance.

Difficulties in mortgage arrangements

1. Initial contribution is not affordable by majority of the population e.g. Nyayo Highrise
2. Estate.
3. Potential participants avoid getting tied up in long term loans
4. Experiences with mortgage arrangements have been discouraging.
5. Interest rate fluctuations make planning uncertain

2. Housing Finance Company of Kenya

This is the largest mortgage company in Kenya. It implements the government"s policy of stimulating house ownership. It is registered under the Building Society Act but operates as a finance company under the Banking Act.

3. Kenya Industrial Estate

This is a body established by the government for the purpose of promoting industrial development.

a) Enhancement of acquisition of skills necessary for industrial development

Technological innovations. The body is concerned with the provision of a base that will be considered necessary for technology development e.g. through research.
It provides capital necessary for industrial development
It provides guarantees for loans to be used for industrial development especially for small scale industries.

4. Industrial and Commercial Development Cooperation (ICDC)

This was incorporated in 1954 by the Kenya Government
The main objective is to facilitate industrial development. It concentrates on projects requiring financial participation and active extension of services
Funds provided are from the Government and commercial banks.

5. Kenya Tourist Development Corporation

This was established by the Government specifically to promote tourism. The main objectives of KTDC are:

1. To provide assistance for establishment of tourism projects
2. To provide financial assistance for the establishment of hotels and tourism lodgings
3. To provide equity finance on joint venture basis in international hotel organizations.

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6. Merchant Banks

Merchant Banks begun life as merchants and begun to operate in financial firms, within the 19th Century.
The merchant banks act as a principal when they buy share from the company before the issue is made. Merchant banks accept bills of exchange which deal in the leasing of industrial equipment.

REINFORCING QUESTIONS

QUESTION ONE

The following information is reported in a daily newspaper with respect to shares traded on the Nairobi Stock Exchange:

	Last 12 months H Shs.	L Shs.	Security	Yesterday Shs.	Previous Deal Shs.	Shares traded
1	200.00	75.00	Kakuzi Limited Ord. Sh.5	120.00	130.00CD	10,000
2	90.50	43.50	Express Kenya Ltd. Ord. Sh.5		43.50	
3	40.00	4.00	ATH Ltd. Ord. Sh.10	Suspended		
4	362.00	102.00	Unga Ltd. Ord. Sh.5	317.00CB	318.00	
5	140.00	90.00	Barclays Bank Ltd. Ord. Sh.10	90.00	90.00	

Required

a) Why does the price of a share change? (6 marks)

b) i) What does the CD against Kakuzi"s share price mean? (2 marks)
ii) Under the yesterday"s column for Express Kenya Ltd., there is a dash (-). Explain. (2 marks)
iii) ATH is indicated as suspended. Explain why a company may be suspended from the stock exchange. (6 marks)
iv) Explain the CB against the Unga share price. (2 marks)
v) What is the meaning of the Ord. Sh.10 indicated against the Barclays Bank? 2 marks)

(Total: 20 marks)

QUESTION TWO

a) In relation to capital markets, differentiate between the terms stock markets and financial markets. (4 marks)

b) The Nairobi Stock Exchange is set to undergo major changes in terms of services when the Central Depository System (CDS) is put in place after the Parliament passes the Bill on the issue.

i) What is the Central Depository System (CDS)? (4 marks)

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ii) How will it benefit the parties to be affected by it? (4 marks)

c) The shares of Ndege Airways Company Ltd. have been trading at Sh.8.00 per share for the last several months. The existing shareholders argue that such shares are undervalued. They say that, the shares should normally be trading at around Sh.15 per share.

i) When would a share price said to be unfair? (4 marks)
ii) If the price earnings ratio for Nege Airways Company Ltd. ordinary shares is 2.5 imes while the price earnings ratio of the shares of Piki Piki Company Ltd. is 10 times, which share is more attractive to a potential investor? Give reasons. (4 marks)

3. a)With reference to capital market, define the following terms:

i) Contango operation (2 marks)
ii) Backwardation (2 marks)
iii) Stags (2 marks)
iv) Role of investment banker (4 marks)

b) Mr. Castro uses a 20% hatch system of timing when to invest in a stock market. In a given year, the top of a given share was Sh.150 and its bottom was Sh.90. During the year, the company paid an interim DPS of Sh.1.50 and a final DPS of Sh.4.50. Determine the % return on investment. (4 marks)

4. a)Explain how the savings and credit co-operative societies mobilise savings and aid investments. (7 marks)

b) How do the Non-Governmental organisations (NGO"s) that extend credit to informal businesses and small traders ensure that the level of credit default is low? (6 marks)

c) Would you consider it prudent to convert savings and credit co-operative societies and the institutions which are used by Non-Governmental Organisations in (b) above into banks? (5 marks)

(Total: 18 marks)

CHECK YOUR ANSWERS WITH THOSE GIVEN IN LESSON 10 OF THE STUDY PACK

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COMPREHENSIVE ASSIGNMENT 4

TO BE SUBMITTED AFTER LESSON 4

To Be Carried Out Under Examination Condition and Sent to Distance learning Administrator for marking by the University

Answer All Questions **Time Allowed: Three Hours**

QUESTION ONE

Safaricom AND Shelter Afrique are examples of companies that have in the recent past issued floating rate bonds.

Require

a) Briefly explain the meaning of a "floating rate" bond. (4 marks)

b) From the point of view of company"s financial manager, outline the merits and demerits, to the company, of issuing floating rate debt as a means of raising capital. (16 marks)

(Total: 20 marks)

QUESTIONTWO

Swale Ltd. wants to raise Sh.15,000,000 in additional funds through a rights offering. The following statements were prepared just before the planned rights offerings:

Balance Sheet as at 31 March 1994

	Sh."000"		Sh."000"
Current assets	45,000	Current liabilities	17,000
Fixed assets	30,000	Long-term debt (25%)	18,000
		Ordinary shares (sh.10 par)	15,000
		Retained Earnings	25,000
	75,000		75,000

Income Statement for the year ended 31 March 1994

	Sh."000"
Earnings before interest and taxes	13,500
Interest	4,500
Earnings before tax	9,000
Taxation (40%)	3,600
Net Income	5,400

Additional information:

1. The company had a price-earnings ratio of 7.5 at the time of the rights offering. Its dividend payout ratio is 40%.
2. The proposed rights offering subscription price per share is Sh.15.
3. No change is expected in the return on total assets or dividend payout ratio after the rights offering.

Required

a) How many rights are required to buy one new share? (3 marks)

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b) Calculate the return on total assets. (2 marks)

Calculate the following immediately before the rights issue:

- Dividend per share; (2 marks)
- Market price per share. (2 marks)

d) Calculate the dividend per share and market price per share one year after the rights of offering and state whether you would recommend the rights offering. (Give reasons) (8 marks)

e) Prepare the company"s balance sheet immediately after the rights offering under (c) above. (7 marks)

QUESTION THREE

a) A firm may adopt a conservative policy or an aggressive policy in financing its working capital needs.

Clearly distinguish between:

- A conservative policy and (3 marks)
- An aggressive policy. (3 marks)

b) The following information relates to the current trading operations of Maji Mazuri Enterprises (MME) Ltd:

- Level of annual sales (uniform per month) - Sh.600 million
- Contribution to sales ratio - 15%
- Debtors recovery period:

Percentage of debtors	Average collection period (days)
25	32
60	50
15	80

- Credit sales as a percentage of total sales - 60%
- Required return on investments - 15%
- Level of bad debts (2% of credit sales) - Sh.7,200,000

The management of the company is in the process of reviewing the company"s credit management system with the objectives of reducing the operating cycle and improving the firm"s liquidity. Two alternative strategies, now being considered by management are detailed as follows:

Alternative A: change of credit terms

The proposal requires the introduction of a 2% cash discount which is expected to have the following effects:

1. 50 per cent of the credit customers (and all cash customers) will take advantage of the 2 per cent cash discount.
2. There will be no change in the level of annual sales, the percentage of credit sales and the contribution of sales ratio.
3. There will be savings in collection expenses of Sh.2,750,000 per month.
4. Bad debts will remain at 2 per cent of total credit sales.
5. The average collection period will be reduced to 32 days.

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Alternative B: contracting the services of a factor

The factor would charge a fee of 2% of total credit sales and advance MME Ltd. 90% of total credit sales invoiced by the end of each month at an interest rate of 1.5% per month.

The effects of this alternative are expected to be as follows:

- No change is expected in the level of annual sales, proportion of credit sales and contributions margin ratio.
- Savings on debt administration expenses of Sh.1,400,000 per month will result
- All bad debt losses will be eliminated
- The average collection period will drop to 20 days.

Required

i) Evaluate the annual financial benefits and costs of each alternative (Assume 360**–day** year) (8 marks)

ii) Advise MME Ltd. management on the alternative to implement (2 marks)

iii) Explain briefly other factors that should be considered in reaching the decision in (ii). above (4 marks)

(Total: 20 marks)

QUESTION FOUR

Love Ltd is considering acquiring Beautiful Ltd. For the past six years, the profits of Beautiful Ltd. has been as follows:

Year	1996	1997	1998	1999	2000	2001
Profits Sh."M"	85	93	107	113	113	119

Love Ltd expects to pay a DPS of Sh.3.20. The current MPS is Sh.40. The growth in dividends will be matched with the growth in earnings of Beautiful Ltd. once acquired. The future expected profits p.a. (equal to the average of past profits) will also grow a rate equal to past profits growth rate. Love Ltd is an all equity firm. Beautiful Ltd has 50 million ordinary shares.

Required

a) Compute the cost of equity of Love Ltd. (6 marks)

b) Using the cost of equity computed in (a) above, determine the maximum price with Love Ltd should pay for each share of Beautiful Ltd to acquire it. (10 marks)

c) What is the significance of valuation of securities. (4 marks)

5. Prime Shoes Ltd. manufactures various types of shoes. The company is now considering its working capital policy for 1994. Fixed assets are projected at Sh.30 million and current liabilities at Sh.27 million. Sales and Earnings before interest and taxes (EBIT) are partially a function of the company"s investment in working capital particularly its investment in stocks and debtors. Prime Shoe Ltd. is considering the following three different working capital investment policies:

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Aggressive policy	-	small investment in current assets
Conservative policy	-	large investment in current assets
Moderate policy	-	moderate investment in current assets.

The following information relates to three policies:

	Aggressive Sh."000"	**Moderate** Sh."000"	**Conservative** Sh."000"
Investment in Current Assets	42,000	45,000	48,000
Projected Sales	88,500	90,000	91,500
EBIT	8,500	9,000	9,150

Required

a) Determine the working capital investment policies for each of the following:

i)	Rate of return on total assets.	(3 marks)
ii)	Net working capital	(3 marks)
iii)	Current ratio	(3 marks)
iv)	Operating margin	(3 marks)
v)	Current assets turnover	(3 marks)

b) Describe the profitability – risk trade offs of these three policies. (6 marks)

END OF COMREHENSIVE ASSIGNMENT No. 4
NOW SEND TO DISTANCE LEARNING FOR MARKING.

LESSON TEN

REVISION AID

CONTENTS

KASNEB SYLLABUS

SPECIFIC OBJECTIVES

A candidate who passes this subject should be able to:

- Understand the concept of business finance
- Analyse the sources of funds for business
- Evaluate various investment decision scenarios for an organisation
- Appraise the performance of a business using financial tools
- Understand the current developments in business financing strategies.

CONTENT

Nature of Business Finance

- Relationship between business finance and financial management
- Goals of the firm
- Agency theory
- Tools of business finance: Time value of money; interest rates, cash flows, risk and return (excluding portfolio management)
- Sources of funds for Small Business Enterprises (SBEs)
- Cost of funds
- Preparation of financing proposals
- Bond markets
- Commercial papers.

Capital Investment Decisions

- Nature of capital investment decisions
- Capital budgeting techniques under certainty; the traditional and discounted cash flow methods; Net Present Value (NPV) and Internal Rate of Return (IRR); comparison of these method.

Financial Markets

- Nature and role of financial markets
- Capital Markets; the stock exchange; terminologies, practices and functions including quotations, dealings, parties and documents used, market efficiency, computation and interpretation of the stock index; commercial banks and non-banking financial institutions.
- The role of Capital Markets Authority and Central Banks and Central Bank of Kenya.
- Money Markets; merchant banks; hire purchase and lease hire companies; Housing finance companies; insurance companies; building societies; Pension and provident funds; special financing institutions: Industrial and Commercial Development Corporation (ICDC), Industrial Development Bank (IDB), Commonwealth Development Corporation (CDC) (Their functions and operations).
- Raising of funds by Government: Internal and External
- Debt Central Depository System.

Valuation Concepts in Finance

- Introduction to valuation concepts: market value, book value, replacement value, intrinsic value.
- Basic valuation of financial assets

Measuring Business Performance

- Ratio analysis as it affects and relates to business evaluation including ratios that measure profitability or earning performance
- Ratios that measure solvency and liquidity
- Coverage ratios
- Financial stability ratios
- Yield ratios; dividend per share, earnings per share, price earnings ratio
- Use of financial ratios by interested parties: management, creditors, investors, employees.

Working Capital Management

- Working capital policies: long-term and short-term investment mix.
- Cash, inventory, debtors and creditors management

Emerging Trends in Business Finance

MODEL ANSWERS TO REINFORCEMENT QUESTIONS

LESSON 1

QUESTION ONE

i) Profit maximisation
ii) Maximisation of the welfare of the employees
iii) Interest of customers
iv) Welfare of the society

OVERLAP

i) If a company maximises profits, it will also be able to meet the needs of the employees in terms of provision of good benefits in addition to good salaries.

ii) There may be some overlap if a business gives better facilities and contributes to social causes to benefit the society. Part of which may be made up of employees who will benefit twice by way of their employees and then by way of social benefits.

iii) Part of the employees may also be customers and as such in a bid to satisfy employees who are also customers, a company will have met the heads of one party twice which will be an overlap in objectives.

iv) If a company maximises profits it will also be able to meet the needs of the society as it can contribute to the society by donations from excess profit.

CONFLICTS

i) However, profit maximisation may conflict with the interest of customers as by maximising profits, a company is bound to charge a higher price.

ii) In a bid to maximise the welfare of employees by way of high salaries and other benefits, the company will compromise the welfare of the society such as contribution to social causes as most of its profits will have been taken up by high salaries and benefits.

iii) If the company meets the customers needs it will not be able to meet the needs of the society. E.g. charging low prices will lead to low profits and thus low contribution to social causes.

QUESTION TWO

a) Being small businesses, sole traders are viewed as risky enterprises and this lowers their credibility in financial markets and their ability to raise finance.

b) Small businesses in Kenya do not have sufficient collateral securities to cover their loans and as such may not qualify for loans especially long term loans due to lack of securities.

c) Being small, these businesses may not be known to lenders and thus cannot raise such finances as overdraft finance.

d) Their size does not allow them to sell shares on the Kenyan stock exchange.

e) A number of small companies in Kenya are family owned and thus excessive use of share capital or even debts finance means loss of their control which they cannot allow.

f) A number of small business in Kenya do not keep proper books of accounts and such cannot raise debt finance as lenders will insist on obtaining audited accounts and or forecasts which these sole traders do not keep.

g) They also lack sound business management principles in the absence of which a business cannot survive in the long run and this limits financiers ability to fund such business.

QUESTION THREE

Agency relationship exists when one or more persons (the principal) hire another person (the agent) to perform some tasks on his or their behalf. The principal will delegate some decision-making authority to the agent. The problems of agency relationships occur when there is a conflict of interest (or lack of goal congruence) between the principal and the agent. The relationship can be explained as follows:

a) **Shareholders and Managers**

The relationship between shareholder and manager may clearly be described as one of agency. This is so because shareholders appoint managers to run the company on their behalf.

Unless managers are themselves major shareholders, their interests may not coincide with those of the firm"s owners. Examples of possible conflicts include:

i) Managers might not work industriously to maximise shareholders wealth if they feel that they will not fairly share in the benefits of their labour.

ii) There might be little incentive for managers to undertake significant creative activities including looking for profitable new projects (ventures) or developing new technology.

iii) Managers might pursue projects which they find personally satisfying at the expense of other projects offering a better return to the company.

iv) Managers might award themselves high salaries (or executive packages) than what the shareholders would consider to be justified.

In order to try to ensure that managers act in the best interests of shareholders, the shareholders incur agency costs such as:

a) Cost of monitoring management activities (e.g. audit fee)

b) Cost of structuring corporate organisation to minimise undesirable management actions (e.g. internal controls).

c) Pegging managers remuneration to the success of the firm. Such remuneration schemes might include:

- Profit based salaries and bonuses
- Share option schemes
- Performance shares

d) In addition, the threat of firing can also be seen as an incentive for efficient management as is the possibility of job loss if a company"s share price through management action is low and a take-over occurs.

QUESTION FOUR

a) The objectives of the nationalised electricity supply industry are likely to be strongly influenced by the government and may not be primarily financial. State owned enterprises exist to provide a service and to ensure that social needs are satisfied: they are not usually profit maximising. The prime objective of a nationalised electricity supply industry might be to promote the development of an efficient, co-ordinated and economic system of electricity supply with subsidiary objectives concerned with earning an acceptable return on capital employed (acceptable being defined by the government) and achieving efficiency through cost control. Service considerations might mean the provision of electricity facilities to remote areas at far less than the cost price. In order to provide reasonably priced electricity for all people, a government might be prepared to subsidize the nationalised industry and set a negative target return on capital. Alternatively the target return might be set such that the industry is a substantial contributor to government finances.

The objectives of a private sector electrical supply company will mainly be determined by the senior management of the company. The prime objective of a company is mainly the maximisation of shareholders wealth. In practice, they might be content to achieve a "satisfying level of shareholders wealth" and also be concerned with a number of non-financial objectives. Such objectives include market share, growth, environmental factors, good working conditions and to facilitate employee and corporate survival. Some of these non-financial objectives will strongly affect the financial success of the company and shareholders wealth. A vital industry like provision of electricity, even if privately owned, might still be subject to strong government influence and constraints especially in provision of services and pricing.

b) Strategic planning in a nationalised industry is subject to government approval. Small-scale investments will be planned and approved by the management of the nationalised industry. However, the amount of investment undertaken is likely to be influenced by the government and the use of external sources from the capital market will usually be limited by the government.

Strategic investment planning in the private sector is strongly influenced by market forces with managers considering the possible effects of investments on share prices and shareholder"s wealth. Private sector investment appraisal techniques usually assume that the company is seeking to maximise shareholders wealth in an efficient market. As there are no share prices in a nationalised industry and investor wealth maximisation is not the assumed objective, some private sector investment appraisal techniques will not be appropriate. However, this does not mean that all private sector techniques cannot be used in the public sector. Discounted cash flow for example is often used in a nationalised industry.

LESSON 2

QUESTION ONE

a) Practical difficulties faced by small scale enterprises in obtaining credit:

- Lack of collateral/security for new credit/loan facilities
- Restrictive terms and conditions including formalities involved for instance, in obtaining loan facilities.
- Existence of financial system which cater for large borrowers only. Such financial systems e.g. banks view small businesses as risky.
- High cost of borrowing i.e interest rate which is usually prohibitive because of high perceived risk of small enterprises.
- Poor managerial skills such that no financial records are maintained and it is difficult to assess cash flows of such enterprises.
- Underdeveloped capital markets which caters for large firms. May be the formation of alternative investment market segments (AIMS) at the NSE is an attempt to accommodate small firms.

b) Internal sources of finance:

- This refers to sources of finance which arise from internal operations of the firm. Examples of internal sources of finance are:

  - Depreciation which yield tax shield and is a provision/transfer to a sinking fund for future asset replacement.
  - Retained earnings – profits not paid out as dividends but retained to financial future investment needs.
  - Deferred tax is a liability to the government which is a source of financial before its paid up by the firms.

- Usually, the cost of depreciation and deferred tax are not computed. They are usually cost-free sources of finance. The cost of retained earnings is the foregone benefits/dividends by ordinary shareholders.

- External sources of finance is the capital (either long or short term) borrowed from sources external to the firm. The cost of such capital may be high thus may restrict the firm to use internal sources of financing only in particular retained earnings. Examples of external sources of financing are:

  - short term loans
  - bank overdraft
  - debt capital using debentures or corporate bonds
  - preference shares capital
  - issue of new ordinary shares.

QUESTION TWO

a) Why different sources of capital have different costs.

Different sources have different costs because of:

- Duration of lending e.g. long term loans will earn a higher interest rate than short term loans due to the maturity risk premium.

- Size of loan – usually, large borrowers will be charged higher interest rates than their small borrowers.

- Uncertainty of returns e.g interest charges are fixed hence lower cost of debt compared to dividends which are uncertain thus higher cost of equity.

- Different types of financial assets some borrowers e.g building societies will offer higher yields to depositors to attract them. Their bonds have high interest rate.

- Perceived risk by lenders:

- Borrowers who are perceived by different market segments to be high risk will have to incur higher cost of capital.

- Need to make profit margin:

- Depending on the source of funds for lending, different sources of capital will add a % profit margin thus different cost of capital.

b) Advantages of having a farmer"s bank:

- No need for a collateral in securing a loan to. Only a guarantor may be required.

- Less formalities in borrowing of loans.

- Minimum deposits will be low according to the savings ability of farmers.

- Other standing charges such as ledger fees withdrawal and deposit fees etc will be eliminated.

- It would meet the unique finance needs of the farmers including giving advise on how to invest the money borrowed.

- Lower cost of borrowing compared to the punitive interest rate charged by banks.

QUESTION THREE

a) Venture Capital

- Form of financing given to new, small risky business by specialised organisations called venture capitalists.

- Venture capitalists e.g. Rockfeller and Acacia fund provide long term debt or equity capital in return for ownership interest in the firms. They also provide managerial skills for the business.

- Usually, financing is at the early stage of business development when risk of business failure is high.

b) Reasons why venture capital market is not developed in Kenya:

- Ignorance – Majority of small scale business owners are not aware of existence of venture capital hence underdevelopment of this market in Kenya.

- Firms may prefer other forms of financing for fear of being dominated by financiers in profit sharing and decision making.

- Almost all small firms are not quoted on stock exchange and their activities are not known by venture capitalists.

- Lack of adequate competent managers to evaluate small businesses which may be viable for venture capital financing.

- There are very few venture capitalists in Kenya. They also have conservative financing approach hence not many people would approach them for financing.

- Lack o institutional framework and government support to develop venture capital market in Kenya.

- Inefficient financial system and stock market which is not well developed to support venture capital development in Kenya.

- Venture capitalists may not have adequate capital and managerial skills to undertake venture capital financing.

QUESTIONFOUR

a) Distinguish between debt and equity.

Debt	Equity
- Carries a fixed rate of return.	- Have a variable rate of return
- Interest is tax allowable	- Dividends are not tax allowable
- Debenture holders/lenders are creditors of the firm	- Ordinary shareholders are owners of the firms
- No residual claim on the income of the firm	- Shareholders have residual claim on the profits and assets of the firm
- No right to vote or attend AGM	- Shareholders have voting right and attend AGM to vote on important management issues.
- Debenture holders provide long term debt capital	- Shareholders provide permanent capital

b) Advantages of leasing:

- Lease charges are tax allowable hence a tax shield/saving for the firms
- No risk of obsolescence – the firm can revoke the lease e.g in case of operating leasing thus it avoids risk of ownership
- Increased flexibility – Short term/operating leases are cancellable hence convenient when the asset is needed temporary.
- Avoidance of investment initial outlay – The firm is able to secure full use of the asset without immediate heavy initial capital investment.
- Off-balance sheet financing – In case of operating lease, lease obligations are not shown in the balance sheet. They do not affect the gearing of the firm. The firm"s borrowing position is thus not affected. Operating leases is thus called off-balance sheet financing.
- Leasing does not require a collateral – It is also less expensive compared to a bank loan. In long term (finance) leases, the lessor is given a chance to buy the asset.

LESSON 3

QUESTION ONE

a) Return on capital employed: R.O.C.E

Since interest is tax allowable, it yield tax shield (interest x tax rate) profits after interest and tax = 600,000 – interest + tax shied

= 600,000 – (10% x 2M) + (10% x 2M x 30%)

= 600,000 – 200,000 + 60,000

= Sh.460,000

$$ROCE = \frac{460,000}{12,000,000} \times 100 = 3.83\%$$

b) Earnings per share $= \frac{460,000}{150,000} =$ Sh.3.07

c) Price earnings ratio $= \frac{36}{3.07} =$ 11.73 years

d) Book value per share $= \frac{\text{Equity (net worth)}}{\text{Number of shares}}$

Equity = 1,500,000 + 1,500,000 + 7,000,000 = 10,000,000

BUPS $= \frac{Sh.10,000,000}{150,000} =$ Sh.66.70

e) Earning $= \frac{\text{Fixed charge capital}}{\text{Total capital}} = \frac{Sh.2,000,000}{Sh.12,000,000} \times 100 = 16.7\%$

Or $= \frac{\text{Fixed charge capital}}{\text{Equity}} = \frac{Sh.2,000,000}{Sh.10,000,000} = 0.20$

This indicates low gearing.

f) Market to book value per share (MBVPS) ratio.

$$MBVPS = \frac{MPS}{BVPS}$$

$$= \frac{\quad}{66.70} 36 = 0.54$$

QUESTION TWO

a) i) Inventory turnover ratio = $\frac{\text{Cost of sales}}{\text{Average stock (closing stock)}}$

$= \frac{1,368,000}{649,500} = 2.1$ times

ii) Times interest earned ratio = $\frac{\text{Operating profit EBIT)}}{\text{Interest charges}}$

$= \frac{105,750}{34,500} = 3.1$ times

iii) Total assets turnover = $\frac{\text{Sales}}{\text{Total Assets}}$

$= \frac{1,972,500}{1,233,750} = 1.6$ times

iv) Net profit margin = $\frac{\text{Net profit (profit after tax)}}{\text{Sales}} \times 100$

$= \frac{42,750}{1,972,500} \times 100 = 2.2\%$

i.e 2.2% is the net profit margin
97.8% is the cost of sales.

b) Industrial analysis

- Industrial analysis involve comparison of firm performance with the industrial average performance or norms.
- This analysis can only be carried out for a given year. I.e

Times series/trend analysis

- This involve analysis of the performance of a given firm over time i.e ratio of different year of a given Co. are compared in order to establish whether the performance is improving or declining and in case a weakness is detected e.g decline in liquidity ratio, this will force the management to take a corrective action.

- When commenting on industrial and trend analysis the following 4 critical points should be highlighted:

  a) In case of individual ratio classify them in their immediate category e.g when commenting on TIER indicate this in a gearing ratio.

     When commenting on a given category of ratio identify the ratios in that category e.g if required to comment on liquidity position identify the liquidity ratio from the ratios computed.

b) State the observation made e.g total asset turnover is declining or increasing over time (in case of trend analysis) or the ratio is lower or higher than the industrial norms (in case of industrial analysis).

c) State the reason for observation i.e. explain why the ratio is declining or increasing.

d) State the implication for observation e.g decline in liquidity ratio means that the ability of the firm to meet in short term financial obligation is declining over time.

Ratio	**ABC Ltd.**	**Industrial Norm**
Inventory Turnover	2.1	6.2
Times interest earned ratio	3.1	5.3
Total Asset turnover	1.6	2.2
Net profit margin	2.2%	3%

i) Inventory turnover
- This is a turnover or efficiency ratio
- The rate is lower than industrial norm
- A low stock turnover could be attributed to:

  i) Charging higher price than competition
  ii) Maintenance of slow moving/obsolete goods
  iii) Where the firm is selling strictly on cash while competitors are selling on credit.

- The firm is not efficiently utilising its inventory to generate sales revenue.

ii) Times interest earned ratio (TIER)

- This is a gearing ratio
- It is lower than industrial average or norm
- This could be due to low operating profit due to high operating expenses or high interest charges due to high level of gearing/debt capital.
- This implies that the firm is using a relatively high level of fixed charge capital to finance the acquisition of assets.

iii) Total asset turnover

- This is efficiency ratio/activity
- Lower than industrial average
- This could be due to holding large non-operational or fully depreciated asset which are not utilised by the firms.
- This implies inefficiency in utilisation of total assets to generate sales revenue.

iv) Net profit margin
- Is a profitability ratio
- Lower than industrial norm
- This could be due to low level of net profit of the firm

relative to sales revenue.

- This implies that the firm has a low ability to control its cost of sales, operating & financing expenses e.g in case of ABC Ltd selling & admin expenses are equal to 82.5% of gross profit

$$\frac{498,750}{604,500} \times 100$$

- Also the cost of sales expense is 69.4% of sales i.e

$$\frac{1,368,000}{1,972,000} \times 100$$

QUESTION THREE

a) i)Earning per share

$$EPS = \frac{\text{Earning to Ordinary Shareholders}}{\text{No. of ordinary shares}}$$

$$= \frac{990,000}{8,000,000 \div 10} = \frac{990,000}{800,000} = \text{Sh.}1.24$$

- The ratio indicates earnings attributable to each ordinary share held by shareholders.
- Shows earning power of the firm.

ii) Price earning ratio

$$PE = \frac{MPS}{EPS} = \frac{}{1.24} 12 = 9.7 \text{ times/years}$$

- The PE indicate that Miss Hisa will take 9.7 years (payback period) to recover her investment in form of buying price per share i.e the firm.

iii) Dividend yield

$$DY = \frac{DPS}{MPS} = 0.925 \times 100 = 7.7\%$$

-The ratio indicate % dividend return for every shilling invested in the firm.

iv) Dividend cover

$$DC = \frac{EPS}{DPS} = \frac{1.24}{p.925} = 1.34 \text{ times}$$

- The ratio indicate number of times dividend can be paid from earnings attributable to ordinary shareholders. The higher the DPS to lower the DC and vice-versa.

v) Book value per share (BVPS)

$$\text{BVPS} = \frac{\text{Networth (Equity)}}{\text{Number of ordinary shares}}$$

Equity = Retained earnings + ordinary share capital

= 1,060,000 + 8,000,000 = 9,060,000

$$\text{BVPS} = \frac{9{,}060{,}000}{800{,}000} = \text{Sh.}11.325$$

QUESTION FOUR

i) Return on Investment $= \frac{\text{Net profit}}{\text{Total asset}}$

- This ratio can increase due to increase in net profit or decrease in total asset.
- The increase may not be due to improvement in performance if it is caused by:
  a) disposal of asset
  b) increase in net profit due to reduction in tax rate
  c) Increase in net profit due to gain associated with disposal of assets or reduction in interest charges resulting from repayment of loans.

ii) Gross profit on sales = GP Margin $= \frac{\text{Gross profit}}{\text{Sales}} \times 100$

- This ratio can improve due to increase in gross profit and due to reduction in cost of sales or increase in sales.
- It may not be judged as improvement if the increase is caused by:
  a) increase in sales as a result of increase in selling price.
  b) increase in GP caused by reduction in cost of raw materials
  c) Where cost of sales decrease due to the use of low quality materials production.

iii) Number of credit given
Debtors collection period

$$= \frac{365}{\text{Debtors Turnover}} \quad \text{or} \quad 365 \times \frac{\text{Average (closing) debtors}}{\text{Annual credit sales}}$$

- Reduction in debtors collection period is improvement but it is not a better performance over the years if the reduction:

  a) Was achieved through offering discount to customers which is a cost of credit policy.
  b) If it resulted in decline in credit sales of the firm whereby customers who could not pay within 45 days switch their business to competitors.

iv) Administration cost of sales

$$\text{Administrative cost of sales Ratio} = \frac{\text{Administrative cost}}{\text{Sales}} \times 100$$

- This ratio can improve (reduction) in ratio over the years in case administration cost reduces or sales increase. A reduction in this ratio is not an improvement in performance if it is caused by:

  a) Increase in sales as a result of increase in selling price.
  b) Decrease in administrative expenses resulting from hiring less qualified personnel who might compromise the quality of product or service.

b) i) Stock Turnover Ratio $= \frac{\text{Cost of Sales}}{\text{Average Stock}}$

$= \text{Average stock} = \frac{800{,}000 + 2{,}200{,}000}{2}$

$= 1{,}500{,}000$

Cost of sales $=$ 75% of 20,000,000
$=$ 15,000,000

Stock turnover $= \frac{15{,}000{,}000}{1{,}500{,}000} =$ 10 times

ii) Number of days stock held $= \frac{365}{\text{Stock turnover}}$

$= \frac{365}{10} = 36.5 \text{days}$

or $= \frac{365 \times \text{Average stock}}{\text{Cost of sales}}$

$= \frac{365 \times 1{,}500{,}000}{15{,}000{,}000} = 36.5 \text{days}$

iii) The stock turnover ratio can be improved as follows:

a) Selling on credit to customers who should pay within a short credit period. This can be achieved through offering of discount.

b) Maintenance of fast moving goods

c) Ensure timely delivery of goods by supplies especially if a delay in delivery would lead to decline in turnover.

d) Adoption of just-in-time (JIT) of managing stock instead of the Economic-Order-Quantity (EOQ).

The financial consequences of a high stock turnover are:

a) Reduction in stock holding/carrying cost
b) Increase in stock ordering cost since stock is ordered frequently to meet the frequent customer demand.

LESSON 4

QUESTION ONE

a) Growth rate in equity.

This can be determined using retention ratio method.

Growth = ROE x Retention ratio

DPS = 10% x par value = 10% x Sh.10 = 1.00

Dividend cover = $\frac{\text{EPS}}{\text{DPS}}$ = 3 times

Therefore: $\frac{\text{EPS}}{\text{Sh.1.00}}$ = 3

EPS = Sh.1.00 x 3 = Sh.3.00

Retention ratio = $\frac{\text{Retained amount}}{\text{Earnings to shareholders}}$

$\frac{\text{EPS} - \text{DPS}}{\text{EPS}} = \frac{3-1}{\text{Sh.3}} = 0.667 = 66.7\%$

Return on equity (ROE) = $\frac{\text{Earning to Shareholders}}{\text{Equity}}$

Earnings to ordinary shareholders =

$$\text{Sh.3.00x}\frac{\text{Sh.1,000,0 00}}{\text{Sh.10par}}\text{x300,000}$$

Equity = Sh.1,000,000 + 800,000 = 1,800,000

ROE = $\frac{300,000}{18,000,000}$ x 100 = 16.7%

g = 66.7% x 16.7% = 11%

b) W.A.C.C Cost of equity

$$Ke\ \frac{d_0(1+g)}{P_0} + g$$

d_0 = Sh.1.00
g = 11%
P_0 = MPS = Sh.18.00

$$Ke\ \frac{1(1.11)}{18} + 0.11 = 0.172 \approx 17.2\%$$

Cost of preference share capital KP =

$$K_P = \frac{d_p}{P_0}$$

d_p = preference DPS = 12% x Sh.10 = Sh.1.20
P_0 = MPS = Sh.15

$$K_p = \frac{1.20}{15} \times 100 = 8\%$$

Cost of debt K_d

$$K_d = \frac{\text{Int.}}{V_d}(1 - T)$$

Int. = Interest = 16% x 100 = Sh.16
V_d = Value of debenture = Sh.100 = Par value
T=30%

$$K_d = \frac{16}{100}(1-0.3) = 0.112 = 11.2\%$$

Or since par value = V_d, then coupon rate = K_d
$\therefore K_d(1\text{-}T) = 16(1\text{-}0.3) =$

11.2% M.Value of equity

E = Sh.1,000,000 / Sh.10 par x 18 = 1,800,000

Mkt. Value of preference share capital

P = 400,000 / Sh.10 par x 5 = 600,000

M.V of debenture = par value	=	300,000
Total market value		2,700,000

	Market Value	% Cost	Monetary cost
Equity	1,800,000	17.2%	309,600
P.S. Capital	600,000	8.0%	48,000
Debt	300,000	11.2%	33,600
	2,700,000		391,200

$$\text{WACC} = \frac{391{,}200}{2{,}700{,}000} \times 100 = 14.49\% = 14.5\%$$

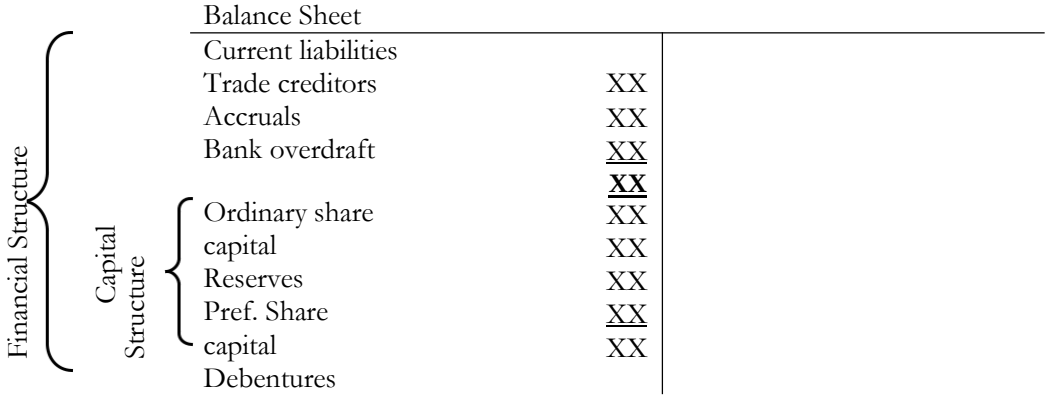
$$WACC = 17.2\%\left(\frac{1{,}800}{2{,}700}\right) + 8\%\left(\frac{600}{2{,}700}\right) + 11.2\left(\frac{300}{2{,}700}\right) = 14.5\%$$

QUESTION TWO

a) Distinguish between capital structure and financial structure.

- Capital structure is the mix or composition of long term and permanent capital of the firm e.g. the mix of equity preference share capital an debentures.

- Financial structure is the entire liabilities side of the balance sheet i.e capital structure and current liabilities.



b) Business risk and financial risk

- Business risk is the uncertainty inherent in the operations of the firms. It is the uncertainty in operating profits occasioned by the use of high level of fixed operating expenses)operating leverage) such as salaries, rent, insurance, depreciation etc.

- Financial risk is the additional risk borne by ordinary shareholders when the firm has to use additional debt capital to finance its assets. It is thus caused by high gearing i.e use of fixed charge capital such as debt and preference share capital.

- Financial risk leads to high fixed financing expenses (interest charges and preference dividends) thus fluctuations in EPS of the firm and eventually liquidity problems.

c) Effects of debt capital on WACC

- At initial stages of introduction of debt capital, WACC will decline since the tax shield associated with interest charges is higher than the bankruptcy costs. The value of the firm is maximized at a point where WACC is lowest.

- Additionally, debt capital have lower cost due to certainty of interest income and the tax shield i.e. $K_d(1-T)$.

- However, as more debt is introduced, financial risk increase and debenture holders and shareholders will demand high return leading to increase in WACC.

d) MWCC and WACC

- WACC is the market value weighted cost of capital. It is based on:
  * market value of each capital component

  * % cost of each capital component.

- Using market values, the cost of retained earnings (Kr) is left out since it is reflected in market value of equity.

- No floatation costs are incorporated in WACC

$$WACC = K_e\left(\frac{E}{V}\right) + K_d(1-T)\left(\frac{D}{V}\right) + K_p\left(\frac{P}{V}\right)$$

Where: K_e, K_d, K_p = % cost of equity, debt and preference share capital.

E,D,P = Market value of equity, debt and preference share capital.

V = Total market value = E + D + P

- MWCC
  - This is the overall/composite cost of additional or marginal capital
  - Floatation costs are incorporated in each % cost of capital apart from cost of retained earnings.
  - The amount to raise from each source is usually based on book value capital structure which is considered to be optimal. The weights are based on the amount of capital raised from each source.

$$MWCC = K_{em}\left(\frac{E_m}{T}\right) + K_{rm}\left(\frac{R_m}{T}\right) + K_{dm}(1-T)\left(\frac{D_m}{T}\right) + K_{pm}\left(\frac{P_m}{T}\right)$$

- $K_{em}, K_{rm}, K_{dm}, KP_m$ = Marginal cost of equity, retained earnings, debt and preference share capital
- E_m, R_m, D_m, P_m = Amount of additional/marginal capital to raise from ordinary shares, retained earnings, debt and preference shares.
- T = Total amount to raise = E_m, R_m, D_m, P_m

QUESTION THREE

(a) and (b) – Refer to Q2(d) above.

c) Compute the % cost of each capital component. Cost of debentures K_d

- Since debentures are redeemable in 10 years time, the cost is called yield to maturity (YTM) or redemption yield (RY).
- If debentures are not redeemable (perpetual(K_d is called running or flat yield.

$$YTM = RY = K_d = \frac{Int(1-T) + (M - V_d)1/n}{(M + V_d)1/2}$$

- Using approximation method for yet YTM,

Int = Interest charges = 18% x 1,000 = Sh.180

T = Tax rate = 40%
M = Maturity or par value = sh.1,000
V_d = Current market value = Sh.950
n = Number of years = 10 years

$$K_d = \frac{180(1-0.4) + (1{,}000 - 950)/10}{(1{,}000 + 950)/2}$$

$$= \frac{113}{975} \times 100 = 11.6\%$$

Cost of equity

$$Ke = \frac{d_0(1+g)}{P_0} + g$$

$K_e = \frac{5(1+0.10)}{24.5\%\ 38} - 0.10 = 0.245 \approx$

d_0 = Sh.5.00

P_0 = MPS = Sh.38

g = growth rate = 10%

Cost of preference share capital K_P

Since MPS = Par value, then K_P = Coupon rate = 10%

NB: The prices of preference shares have not changes since floatation hence MPS = par value

Capital	Market Value	% Cost	Monetary Cost
Equity	$Sh.38 \times \frac{Sh.12,500}{Sh.10} = 47,500$	24.5	11,637.5
Debt	$Sh.950 \times \frac{Sh.16,000}{Sh.1,000} = 15,200$	11.64	1,763.2
Preference share capital = Par value	6,250	10	625.0
Total	68,950		14,025.7

$$WACC = \frac{14,025.7}{68,950} = 20.3\%$$

$$WACC = 24.5\left(\frac{647,500}{68,950}\right) + 11.6\left(\frac{15,200}{68,950}\right) + 10\left(\frac{6,250}{68,950}\right) = 0.203 \approx 20.3\%$$

c) ii) Book value weights should be used discretely since they are historical. They relate o the past when the capital was initially raised.

QUESTION FOUR

a) Amount of capital to raise = 500M – 360M = 140M

Amount to raise in 1996 = 85% x 140M = 119M

Since the existing capital structure is optimal, the Sh.119M would be raised as follows:

$$= \frac{90M}{300M} \text{ x}119M = 35.70M$$

Log term debt $= \frac{135M}{300M} \text{ x}119M = 53.55M$

Ordinary share capital
Retained Earnings $= \frac{75M}{300M} \text{ x}119M = 29.75M$

Amount to raise for equity = 35.70M + 29.75M = 65.45M

b) Determine the market price per share

Dividend yield = 12% = 0.12

DPS = Sh.3.00

$DY = \frac{DPS}{MPS}$

$\therefore MPS = \frac{DPS}{DY} = \frac{3.00}{0.12} =$ Sh.25

MPS net of floatation cost = Sh.25 x 90% = 22.50

Amount to raise from issue of ordinary shares = Sh.35,700,000 Issue price per share = Sh.22.50

Number of shares to issue $\frac{Sh.35,700,000}{Sh.22.50}$

= 1,586,667
= 1,587,000 shares

c) Compute the marginal cost of each source of finance

Marginal cost of equity

$$K_r = \frac{d_0(1+g)}{P_0 - f_c} + g = \frac{3(1.10)}{22.50} + 0.10 = 0.247 \approx 24.7\%$$

Cost of retained earnings K_r (no floatation costs)

$$K_r = \frac{d_0(1+g)}{P_0} + g = \frac{3(1.10)}{25} + 0.10 = 0.232 = 23.2\%$$

Cost of retained debt K_d

Since new debentures can be sold at par, then:

K_d = coupon rate = 16%

$K_d(1-T) = 16\%(1-0.4) = \underline{9.6\%}$

Amount to raise = 119M

- 53.55M from debentures
- 35.70M from ordinary shares
- 29.75M from retained earnings

Marginal weighted cost of capital (MWCC)

$$MWCC = 9.6\%\left(\frac{53.55}{119}\right) + 24.7\%\left(\frac{35.7}{119}\right) + 23.2\%\left(\frac{29.75}{119}\right)$$

$$= 4.32 + 7.41 + 5.80 = \underline{17.53\%}$$

LESSON 5

QUESTION ONE

Refer to the Study Pack for advantages of NPV, IRR and P.I methods of project appraisal.

QUESTION TWO

a) Computation of NPV

The discounting factor (present value interest factor PVIF) can be computed using the formulae $\frac{1}{(1+r)^n} = (1+r)^{-n}$

UPESI TZO

Year	Cash flow „000"	$PVIF_{12\%,n}$	P.V	$PVIF_{17\%,n}$	P.V
1	600	0.893	538.5	0.855	513.0
2	1,800	0.797	1,434.6	0.731	1,315.8
3	2,000	0.712	1,424.0	0.624	1,248.0
4	3,000	0.636	1,908.0	0.534	1,602.0
5	2,400	0.567	1,360.8	0.456	1,094.4
Total present value			6,663.2		5,773.2
Less initial capital			6,000.0		6,000.0
Net present value			663.2		(226.8)

UPESI MO2

Year	Cash flow „000"	$PVIF_{12\%,n}$	P.V	$PVIF_{17\%,n}$	P.V
1	1,800	0.893	1,607.4	0.855	1,539.0
2	2,400	0.797	1,912.8	0.731	1,754.4
3	3,000	0.712	2,136.0	0.624	1,872.0
4	1,800	0.636	1,144.8	0.534	961.2
5	1,600	0.567	907.2	0.456	729.6
Total present value			7,708.2		6,856.2
Less initial capital			7,000.0		7,000.0
Net present value			708.2		(143.8)

b) The rate of return for each project is the internal rate of return (Time – adjusted rate of return of a project).

Since both projects are yielding a positive NPV at 12% discounting, rediscount the cash flows again at a higher trial discounting to get a negative or zero NPV. Try 17% [done in part (a)].

	Pesi TZO	**Upesi MO2**
NPV @ 12%	663.2	708.2
NPV @ I.R.R.	0	0
NPV @ 17%	-226.8	-143.8

I.R.R. for Pesi TZO $= 12\% + \frac{663.2 - 0}{663.2 - (-226.8)} (17 - 12)$

$= 12\% + \frac{663.2}{890} (5\%) = \underline{\underline{15.73\%}}$

I.R.R. for Upesi MO2 $= 12\% + \frac{708.2 - 0}{708.2 - (-143.8)} (17\% - 12\%)$

$= 12\% + \frac{708.2}{852} (5\%) = \underline{\underline{16.16\%}}$

b(ii)- Both projects have a positive NPV @ 12% cost of capital. However project
Upesi MO2 has higher NPV.

- Both projects produce I.R.R. greater than cost of capital. However, project Upesi MO2 has higher I.R.R.

- Therefore, accept project Upesi MO2.

QUESTION THREE

Depreciation p.a. = 20% x 2,200,000 = 440,000

Prepare a cash flow schedule:

Year	1 Sh."000"	2 Sh."000"	3 Sh."000"	4 Sh."000"	5 Sh."000"
Sales	1,320	1,440	1,560	1,600	1,500
Less operating costs	700	700	700	700	700
EBOT	620	740	860	900	800
Less depreciation	440	440	440	440	440
EBT	180	300	420	460	360
Less tax @ 35%	63	105	147	161	126
EAT = accounting profits	117	195	273	299	234
Add back depreciation	440	440	440	440	440
Cash flows	557	635	713	739	674

Screening Criteria

1. The net commitment of funds should not exceed 4 years i.e the payback period should at least be 4 years. Therefore, compute the payback period.

Year	Cash flows	Accumulated Cash flows
1	557	557
2	635	1,192
3	713	1,905
4	739	2,644
5	674	3,318

The initial capital of Sh.2,200,000 is recovered after year 3. After year 3 (during year 4) a total of Sh.295,000 (2,200 – 1,905) is required out of the total year 4 cash flows of Sh.739,000. Therefore payback period = $3\text{yr s} + \frac{295}{739} = 3.4\text{yr s}$

2. The time adjusted or discounted rate of return is the I.R.R of the project. Discount the cash flows at 15% cost of capital given:

Recall discounting factor (PVIF) = $(1+r)^{-n} = \frac{1}{(1+r)^n}$

Year	Cash flows „000"	$PVIF_{15\%}$	P.V	$PVIF_{14\%,n}$	P.V.
1	557	0.870	484.59	0.877	488.49
2	635	0.756	480.06	0.770	488.95
3	713	0.658	469.15	0.675	481.28
4	739	0.572	422.71	0.592	437.49
5	674	0.497	334.98	0.519	349.81
Total P.V.			2,191.49		2,246.30
Less initial capital			2,200.00		2,200.00
N.P.V.			(8.51)		46.30

Since the NPV is negative at 15% cost of capital rediscount the cash flows again at a lower rate, say 14%, to get a positive NPV.

NPV @ 14% = 46.3
NPV @ I.R.R. = 0
NPV @ 15% = -8.51

$$\text{I.R.R.} = 14\% + \frac{46.3 - 0}{46.3 - (-8.51)}(15\% - 14\%)$$

$$= 14\% + \frac{46.3}{54.81}(1\%) = 14.85\%$$

3. The unadjusted rate of return on assets employed is the accounting rate of return.

$$\text{ARR} = \frac{\text{Average accounting profits (EAT)}}{\text{Average investment}} \times 100$$

Average accounting profits = $\frac{117+195+273+299+234}{5yrs}$

= 223.6 p.a.

Average investment = (Initial capital + Salvage value)½

= (2,200 + 0)½

= 1,100

A.R.R = $\frac{223.6}{1,100} \times 100$ = 20.3%

QUESTION FOUR

a) The features of a sound project appraisal technique are:

- It should consider the time value of money by discounting the cash flows.
- It should give a direct decision criteria on when to accept or reject a project.
- It should rank independent projects in order of their economic viability
- It should distinguish between acceptance and unacceptable projects which are mutually exclusive.
- It should generally be applicable to any conceivable project available.

b) Practical problems faced by finance managers in capital budgeting:

- Lack of information on viable investment opportunities.
- Lack of adequate capital to undertake all viable independent projects.
- Uncertainty of future cash flows or benefits including methods of assessing risk of a project.
- The appropriate project appraisal technique to use
- Effects of inflation, changes in cost of capital and their qualitative information.

c) The features of long term investment decisions are:

- They involve significant amount of initial capital.
- They are usually irreversible since reversing such decisions leads to loss since some specialised assets already acquired may not have second hand market.
- They involve risk and uncertainty with reference to economic life, cash flows, cost of capital, inflation rate, political and technological changes etc.
- The benefits are received over a series of years.
- There is significant time lag between the time capital is committed and the time benefits/cash flows are received.
- They require prioritisation of scarce financial resources hence the need to evaluate independent projects.

QUESTION FIVE

$$P.I = \frac{\text{Total Present Value}}{\text{Initial Capital}}$$

But NPV = P.V – Initial cost
Therefore total P.V = NPV + initial cost

Since project 6 has a negative NPV, it should outrightly be rejected. Evaluate 5 projects remaining.

Project	Initial Capital	NPV	Total PV	PI	Ranking
1	60	21	81	$\frac{81}{60} = 1.35$	4
2	15	9	24	$\frac{25}{15} = 1.60$	2
3	20	9	29	$\frac{29}{20} = 1.45$	3
4	55	15	70	$\frac{70}{55} = 1.27$	5
5	30	20	50	$\frac{50}{30} = 1.67$	1

Allocate the Sh.100M according to PI ranking.

Project	Rank	Initial capital		NPV
5	1	30		20
2	2	15		9
3	3	20		9
1	4 Balance	$\frac{35}{100}$	$\frac{35}{100} \times 21$	12.25
				50.25

Using NPV Ranking

Project	Initial capital	NPV	Ranking
1	60	21	2
2	15	9	4
3	20	9	5
4	55	15	3
5	30	20	1

Allocation on basis of NPV ranking

Project	Rank	Initial capital		NPV
5	1	30		20
1	2	60		21
5/55 of 4	3 Balance	5	5/55 x 15	0.82
	Total NPV			41.82

Using P.I ranking, NPV is higher since the P.I ignores the size of the project and rank projects in relative terms i.e according to P.V profitability for every shilling of initial capital.

LESSON 6

QUESTION ONE

a) Expected DPS $d_0(1+g)$ = Sh.6.00

Cost of equity K_e = 15%

Q =Retention ratio x cost of equity (RUE)

=(1-0.6) x 0.15 = 0.06 = 6%

$$P_0 = \frac{d_0(1+g)}{Ke-g} = \frac{6}{0.15-0.06} = \text{Sh.66.70}$$

MPS = Sh.40

The share is undervalued.

b) Significance of valuation of securities:

- To determine the price of a security incase of mergers and acquisitions
- Where a firm is floating shares for the first time
- Where a firm wants to sell its subsidiary to a third party
- When the firm is sold to a management buyout team as a going concern.

c) Zero coupon bond does not pay periodic interest charges.

Par value = Sh.100,000 = lumpsum at end of year 5

Issue price (PV) = 100,000(1-0.32) = 68,000

Number of years = 5years

Recall future value = PV x $(1 + r)_n$

$\therefore$ 100,000 = 68,000$(1 + r)_5$

$$(1+r)_5 = \frac{100,000}{68,000} = 1.4706$$

$$1 + r = \sqrt[5]{1.4706} = 1.08$$

$$r = 1.08 - 1 = 0.08 \approx 8\%$$

d) Advantages of zero coupon rate

- The firm is able to raise debt capital without fixed commitment to pay fixed periodic interest charges
- It creates certainty on the amount of debt payable in future at maturity
- The borrower does not have to worry about changes in market interest rate.

QUESTION TWO

a) The maximum price to pay is equal to the present value of all the expected future net cash flows.

Discounting rate = 9%+5% = 14%	
PV of year 1 – 5 net cash flows p.a.	Sh."000"
50 x $PVAF_{14\%,5}$ = 50 x 3.433	171.65
PV of year 6 – 10 net cash flows p.a.	
= $90(PVAF_{14\%,10} - PVAF_{14\%,5})$	
= 90(5.216 – 3.433)	160.47
PV of year 11 - ∞ net cash flows p.a.	
= $130(PVAF_{14\%,\infty} - PVAF_{14\%,10})$	
= $130\left(\frac{1}{0.14} = 7.143 - 5.216\right)$	250.51
Maximum price to pay	582.63

Notes: PVAF = Present value annuity factor

$= \frac{1-(1+r)^{-n}}{v}$

= PVAF in perpetuity = 1/r

b) Other factors to consider:
- The firm which the consideration would take e.g pay cash or share for share exchange.
- Increased borrowing power of Nyakua Ltd.
- Dilution in future EPS and ownership in Nyakua Ltd.
- Does acquisition of Uza increases the market share of Nyakua especially if Uza Ltd was a competitor.
- How dows the risk of Nyakua Ltd. change with acquisition of Uza Ltd.
- What is the growth potential of Uza Ltd.?

QUESTION THREE

a) DPS = Sh.2.00

Cost of equity K_e = 18%

Year		Expected DPS	PVIF18%,n	PV
1		$2(1.15)_1$ = 2.30	0.848	1.95
2	15%	$2(1.15)_2$ = 2.65	0.718	1.90
3		$2(1.15)_3$ = 3.04	0.609	1.85
4		$3.04(1.10)_1$ = 3.35	0.516	1.73
5	10%	$3.04(1.1)_2$ = 3.68	0.437	1.61
6		$3.04(1.1)_3$ = 4.05	0.370	1.50
7 - ∞	5%	$d_0(1+g)$		
		$= \frac{4.05(1.05)}{0.18-0.05} = 32.71$	0.370	12.10
Total PV = Price of a share				22.64

PVIF = $\frac{1}{(1+r)^n}$

a(ii) = b(ii)

The value of a share will change if held for only 3 years since intrinsic value shall be based on 3 year expected DPS only.

b) Compute the growth

$d_0(1+g)^n = d_n$

Where: $d_0 = 2.50$
n = number of years of growth = 3 years
$d_n = 2.81$

Therefore: $2.50(1+g)_3 = 2.81$

$(1+g)_3 = \frac{2.81}{2.50} = 1.124$

$1 + g = \sqrt[3]{1.124} = 1.04$

$g = 0.04 \approx 4\%$

$P_0 = \frac{d_0(1+g)}{K_e - g}$

$= \frac{2.81(1.04)}{0.14-0.04} = \frac{2.922}{0.10} =$ Sh.29.22

QUESTION FOUR

a) Valuation of ordinary shares is more complicated than valuation of bonds and preference shares because of:

- Uncertainty of dividend unlike interest charges and preference dividends which are certain
- The data for valuation of ordinary shares is historical which may not reflect future expectations.
- A constant stream of dividends per share is assume
- The growth rate is assumed constant and is computed from past dividends.
- The cost of equity/required rate of return on equity is assumed to be constant though it changes over time.

b) i)If they do nothing:

d_0 = Shs.3.00
g = 6%
K_e = 15%

$$P_0 = \frac{d_0(1+g)}{K_e - g} = \frac{3(1.06)}{0.15-0.06} = \text{Sh.35.33}$$

ii) Invest in a venture
d_0 = Shs.3.00
g = 7%
K_e = 14%

$$P_0 = \frac{d_0(1+g)}{K_e - g} = \frac{3(1.07)}{0.14-0.07} = \text{Sh.45.86}$$

iii) Eliminate unprofitable product line
d_0 = Shs.3.00
g = 8%
K_e = 17%

$$P_0 = \frac{d_0(1+g)}{K_e - g} = \frac{3(1.08)}{0.17-0.08} = \text{Sh.36.00}$$

iv) Acquire a subsidiary
d_0 = Shs.3.00
g = 9%
K_e = 18%

$$P_0 = \frac{d_0(1+g)}{K_e - g} = \frac{3(1.09)}{0.18-0.09} = \text{Sh.36.33}$$

The best alternative is to invest in a venture since this option has the highest impact price of Sh.45.86.

LESSON 7

QUESTION ONE

a) Dividend payout ratio = $\frac{DPS}{EPS} \times 100$

Year	A Ltd.	B Ltd
1996	$\frac{0.45}{1.89} \times 100 = 23.8\%$	$\frac{0.35}{2.05} \times 100 = 17.1\%$
1997	$\frac{0.45}{1.50} \times 100 = 30.0\%$	$\frac{0.35}{1.45} \times 100 = 17.2\%$
1998	$\frac{0.45}{2.00} \times 100 = 22.5\%$	$\frac{0.35}{2.08} \times 100 = 17.4\%$
1999	$\frac{0.45}{2.60} \times 100 = 17.30\%$	$\frac{0.35}{2.55} \times 100 = 17.7\%$
2000	$\frac{0.45}{3.90} \times 100 = 11.5\%$	$\frac{0.35}{4.08} \times 100 = 16.9\%$

Price – earning ratio = $\frac{MPS}{EPS}$

Year	A Ltd.	B Ltd
1996	$\frac{(16+18)½}{1.89} = 9.0$yr s/ times	$\frac{(11+15)½}{2.05} = 6.34$yr s/ times
1997	$\frac{(12+15)½}{1.50} = 9.0$yr s	$\frac{(6+14)½}{1.45} = 6.9$yr s
1998	$\frac{(14+20)½}{2.00} = 8.5$yr s	$\frac{(7+16)½}{2.08} = 5.56$yr s
1999	$\frac{(21+26)½}{2.60} = 9.0$yr s	$\frac{(15+23)½}{2.55} = 7.45$yr s
2000	$\frac{(26+40)½}{3.90} = 8.46$yr s	$\frac{(21+44)½}{4.08} = 7.97$yr s

b) The shares of B Ltd. are not performing well because of uncertainty of DPS compared to certainty of DPS for A Ltd. This uncertainty leads to higher required rate of return by ordinary shareholders thus lower market value of a share.

c) If a firm is making heavy losses, the EPS would be negative. With a positive P/E ratio the MPS would be negative i.e.

MPS = -EPS x P/E ratio

A negative MPS cannot be interpreted hence the P/E ratio model collapses.

QUESTION TWO

a) Refer to Lesson 7 on factors influencing dividend policies.

b) i)A firm with a large proportion of high income individuals will pay low or no dividends. Such shareholders prefer high capital to reduce their tax burden since capital gains in Kenya are tax exempt.

ii) A growth company with abundance of good investment opportunities. Such a firm would pay low and retain more profits to finance its good investment opportunities.

iii) A company with ordinary growth and high liquidity.
Such a firm could pay high dividends and retain less. With high liquidity and much unused debt capacity, the firm can easily borrow debt capital to achieve optimal debt capital. It has access to capital markets.

iv) A dividend paying company that experiences an unexpected drop in earnings from trend. Such a firm would pay medium dividends but if the drop in earnings persist in future it should adopt payment of low dividends.

v) A company with volatile earnings and high business risk.
This firm should pay low dividends and retain more profits to finance its investments. With high business risk, the firm does not have access to capital markets and it is difficult to raise secure debt capital which would nevertheless increase the financial risk of the firm.

QUESTION THREE

Solution: Refer to Lesson 7 for discussion of factors influencing dividend policy.

LESSON 8

QUESTION ONE

a) Target cash balance,

$$Z = \left[\frac{3b\delta^2}{4i}\right]^{1/3} + L$$

Where: b = 50
L = 10,000
δ = 2,500
i = $\frac{0.07465}{360}$

$$Z = \left[\frac{3x50(2,500)^2}{4x\frac{0.07465}{360}}\right]^{1/3} + 10,000$$

= $[1.1320746 \times 10_{12}]_{1/3}$

= 10416.648 + 10,000

= Sh.20416.648

≈ Sh..20417

b) Lower Limit is given and is equal to Sh.10,000

Upper Limit H = 3Z – 2L
H =3(20,417) – 2(10,000)
=Sh..41,251

c) Decision Rule:

Wema should hold a cash balance of between Sh.10,000 and Sh.41,251. Any time the balance reaches Sh.41,251, then marketable securities should be bought amounting to Sh.20,834 (41,251 – 20,417) to return the balance to the target. When the cash balance reaches Sh.10,000, then marketable securities (or borrowings) should be sold worth Sh.10,417 to bring the balance to the target level.

d) Expected average cash balance = $\frac{4Z - L}{3}$

= $\frac{4(20,417) - 10,000}{3}$

= Sh..23,889

QUESTION TWO

a) EOQ = optimal amount to order = $\sqrt{\frac{2DC_0}{C_n}}$

Where: D = annual demand = 20,000 filters x 12 = 240,000
C_0 = Sh.400
C_n = Sh.10

$$Q = EOQ = \sqrt{\frac{2x240,000x400}{10}} = 4,381.7 \text{filters}$$

No. of lot sizes = $\frac{4,381.7}{100} = 43.817 \approx 44$ lot sizes

b) Without safety stock:

$$TC = \frac{1}{2}QC_n + \frac{DC_0}{Q}$$

$$\left(\frac{1}{2}x4,381.7x10\right) + \frac{240,000}{4,381.7}x400$$

21,909 + 21,909 = Sh.43,818

In presence of 2000 filters per annual of safety stock then:

$$TC = \frac{1}{2}(Q + S)C_n + \frac{D}{Q}C_0$$

$$\frac{1}{2}(4,381.7 + 2,000)Sh.10 + \frac{240,000}{4,381.7}x400$$

31,909 + 21,909 = 53,818

c) Effects of the discount
If the firm is to order 50 lots, then filters = 50 lots x 100 filters per lot = 5,000 filters.
That is new EOQ = Q = 5,000 filters
New buying price = 98% x 100 = Sh.98

Analysis of savings

			Net Savings
Current buying costs	=	240,000 filters x 100 = 24,000,000	
New buying costs	=	240,000 filters x 98 = 23,520,000	480,000

Ordering costs

Current = $\frac{D}{Q}C_0 = \frac{240,000}{4,381.7} \times 400$ = 21,909

New = $\frac{240,000}{5,000} \times 400$ = 19,200 2,709

Holding cost

Current ½QCn = ½ x 4,381.7 x 10	=	21,909	
New = ½ x 5,000 x 10	=	25,000	(3,091)
Increamental cost			479,618
Overall net benefits			

Take the discount since it yields positive overall net benefits.

QUESTION THREE

a) The discriminant function of the form $Z = 9_1X_1 + 9_2X_2$

Where $a_1 = \frac{Szzdx - Sxzdz}{SzzSxx - (Sxz)^2}$

And $a2 = \frac{Sxxdz - Sxzdx}{SzzSxx - (Sxz)^2}$

Note: the terms have been defined in the text.
We need to first compute dx and dz.

Good Accounts		**Bad Accounts**	
X	Y	X	Y
1.1	13	0.7	11
1.5	15	0.9	-4
1.2	17	0.8	6
0.9	21	1.3	2
1.6	7	1.1	6
2.2	8	0.5	8
0.9	16	0.3	8
1.0	13	1.4	6
1.3	8	0.9	3
1.3	2	1.1	14
1.3	12	0.9	6

dx = 1.3 – 0.9 = 0.4

dz = 12 – 6 = 0.6

The next step is to determine Sxx, Szz and Sxz

Use the scientific calculator to determine the variance of the X"s(Sxx) and the variance of Y"s (Szz).

We also use the following formula to determine Sxz (th covariance between X and Y)

$$C_oV_{XY} = E\left[\left(X - \overline{X}\right)\left(\overline{Y} - Y\right)\right] = E(X)E(Y)$$

X	Y	XY	Z
1.1	13	14.3	5.14
1.5	15	22.5	6.52
1.2	17	20.4	6.12
0.9	21	18.9	6.07
1.6	7	11.2	5.34
2.2	8	17.6	7.05
0.9	16	14.4	5.17
1.0	13	13	4.89
1.3	8	10.4	4.75
1.3	2	2.6	3.67
0.7	11	7.7	3.76
0.9	-4	-3.6	1.57
0.8	6	4.8	3.12
1.3	2	2.6	3.67
1.1	6	6.6	4.24
0.5	8	4	2.71
0.3	8	2.4	2.20
1.4	6	8.4	4.65

	0.9	3	2.7	2.83
Mean	1.1	14	15.4	5.32
	1.1	9	9.815	

δ^2 0.163 34.6

$C_oV_{xy} = 9.815 - (1.1)(9) = -0.085$

Therefore:
dx = 0.4
dz = 0.6
Sxx = 0.163
Szz = 34.6
Sxy = -0.085

$$a_1 = \frac{34.6(0.4) -)-0.085)(6)}{34.6(0.163) - (-0.085)^2}$$

$$a_2 = \frac{0.163(6) - (-0.085)(0.4)}{5.632}$$

$$= \frac{1.012}{5.632} = 0.180$$

Therefore the function will be given by:

$$Z = 2.548(1.1) + 0.18(13)$$
$$= 5.14$$

The Z scores are indicated in the above table.

The Z score that minimizes misclassification form can be easily identified from the Z score computed above. From these scores a Z score of 4.70 will have only 2 accounts being misclassified.

QUESTION FOUR

a) Refer to lesson 8 in the study manual

b) i)Analysis

Since net profit margin is given, analyse the net benefits on the basis of net profits

	Current policy	**New policy**
Sales	5,000,000	5M x 1.30 = 6,500,000
Credit sales	= 25%x5000,000 = 1,250,000	40%x6,500,000=2,600,000
Bad debts	= 2% of credit sales	3% of credit sales
Credit period	= 40 days	35 days
NP Margin	15%	15%

Analysis

Net profits

New policy	=	15% x 2,600,000 =	390,000	
Old policy	=	15% x 1,250,000 =	187,500	
Net benefit				202,500

Bad debts

New policy	=	3% x 2,600,000	=	78,000
Old policy	=	2% x 1,250,000	=	25,000
Net benefit (cost)				
(53,000)				

Debtors

New policy	=	$\frac{35}{360}$ x2,600,000	=	252,778
Old policy	=	$\frac{40}{360}$ x1,250,000	=	138,880
Increase in debtors			=	113,889

Forgone benefits on tied up capital = 14% x 113,889	=	(15,945)
Credit controller salary		
New policy	50,000	
Old policy	0	
(50,000)		
Net benefits		83,555

b) ii)The credit policy should be determined by the Board of directors of the firm with advise from finance manager and credit controller.

LESSON 9

QUESTION ONE

a) The price of a share would change due to demand and supply forces in the stock exchange which may be triggered by factors such as:

- Announcement of dividends
- Publication of financial statements showing profitability of the firm
- Announcement of mergers and acquisitions
- Political stability in the country e.g. general elections
- Economic performance and policies such as fiscal and monetary policies
- Growth and investment opportunities of the firm
- The change in management team of the firm
- Changes in interest rates in the economy which will affect the cost of capital and value of the firm.

b) i)CD means Cum-dividends i.e. the firm has declared dividends and the shareholders registered is not yet closed. During this period shares are selling cum-div.

ii) A dash (-) means no shares were traded (no shares were either bought or sold)

iii) A company may be suspended from the stock exchange if:

- Its share price falls below the par value
- The firm (e.g a bank) is put under statutory management by CBK
- When the firm is insolvent i.e. total liabilities are greater than total assets.
- When its capital falls below the required capital base
- When the firm fails to hold an AGM and publish its audited financial statements
- When a firm violates rules and regulations of Capital Market Authority e.g failure to seek permission from CMA to make rights issue.

iv) CB means Cum-bonus or script issue or capitalization issue. The firm has declared a bonus issue which has not been given to shareholders.

v) Ord. Sh.10 indicates the par/nominal value of a share as indicated in the capital clause of the firm. It is the price at which shares were sold when the firm was getting quoted on the stock exchange.

QUESTION TWO

a) Financial markets – There are markets which facilitate transfer of funds from surplus economic units (lenders) to deficit economic units (borrowers).

- In these markets, financial assets and liabilities are created where financial assets are held by lenders and liabilities are incurred by borrowers.

- Financial markets consist of capital and money markets i.e. markets for long term and short term instruments respectively.

  Stock market is a form of capital market where long term securities such as shares and debentures are traded through demand and supply forces which determine security prices.

- The buying and selling of securities is usually through a stock broker. Stock market is a portion of financial markets.

b) i)Central Depository System (CDS)

This is an automated/electronic or computerized system of trading of shares where a shareholder shall have a share account in the CDS which will act as the prime facie evidence of shares ownership. The share certificate is thus not required since all share records are electronically held.

The share account is debited on purchase of shares and credited on sale of shares.

ii) The advantages of CDS are:

- It will facilitate fast trading of shares
- The transfer of shares between investors could take only 3 days
- Reduced transaction costs e.g. no need for stamp duty since share certificates are not required.
- It will improve the liquidity of the stock exchange due to increased share turnover
- It will lead to more efficient effective and transparent securities market to achieve international standards.
- It leads to dematerialisation since no physical share certificate is required. The account at CDS is adequate evidence of share ownership.

c) i)A share price would be said to be unfair if:

- It is not determined by demand and supply forces
- If the price is not consistent with the activities of the firm e.g a firm with high profits and good growth potential experiencing decline in share price.
- The price is not compatible with the price of other similar shares of firms in the same industry.
- In case of insider trading.

ii) P/E ratio indicates the payback period of an investment. The shares of Ndege Limited are preferable since payback is only 2.5 years compared to 10 years for Piki Piki Ltd.

QUESTION THREE

a) i)Contango – interest paid by the investor for money borrowed by a stock market to buy shares for the investor.

ii) Backwardation – Commission paid to the lender of shares where a dealer "borrowed" shares which he had to deliver immediately.

iii) Stages:
- Speculatory who buy new securities believing they are undervalued.
- They sell them when price rises to make a gain.

iv) Role of investment bankers
- Advising on issue price of new shares
- Underwriting
- Financing decisions of the firm
- Portfolio management
- Defensive mechanism in case of acquisition
- Valuation of securities

b) Selling price
= Sh.150 x (1-0.2) = Sh.120 i.e 20% below the highest price

Buying price
= Sh.90 x (1 + 0.2) = Sh.108 i.e 20% above the highest price
Capital gains = Sh.12 per share
Interim and final DPS = 1.50 + 4.50 = Sh. 6
Total returns from the share Sh.18

Investment = B.P = Sh.108

% return on investment = $\frac{18}{108} \times 100 = 16.7\%$

QUESTION FOUR

a) Savings and Credit Co-operative Societies mobilize savings and assist in investment as follows:

- Individuals with surplus funds make voluntary savings with Saccos. Saccos are thus vehicles of savings in the economy.

- Individuals who need to make investments borrow from Saccos without the need for collateral.

- The interest rate charged on borrowers (who are also savers) is below the market interest rate.

- The borrowing is based on the savers savings. The repayment terms are very attractive. Repayments are guaranteed by fellow Sacco members.

- Saccos" thus provide means of savings and sources of borrowing for investment.

b) The credit default for NGO that extend credit to informal businesses and small traders is kept low in various ways such as:

- Amount advanced is based on the borrowers ability to pay.
- Use of friends/other traders as guarantors of the borrower
- Lender has to do research and acquire knowledge on the conditions surrounding the borrower.
- Lenders usually have follow-up mechanism to ensure effective use of amount borrowed and provide support on effective use of debt.
- Pressure is exerted by fellow borrowers/guarantors on the defaulting borrower to pay.

c) No. This is because:

- Sacco"s are not profit making firms and are strictly for serving members interest.
- If they are converted into banks, the lending mechanism is formalized which could frustrate the efforts of the Saccos and members.

PAST CPA EXAMINATION PAPERS

KENYA ACCOUNTANTS AND SECRETARIES NATIONAL EXAMINATIONS BOARD

CPA PART II and CPA PART III

June 2001 **Time: 3 Hours**

Answer ALL questions in SECTION I and ONE question in SECTION II. Marks allocated to each question are shown at the end of the question. Show all your workings.

SECTION I

QUESTION ONE

a) State the circumstances under which it would be advantageous to lenders and to borrowers from the issue of:

i) Debentures with a floating rate of interest. (4 marks)
ii) Zero-coupon bonds. (4 marks)
(Ignore taxation)

b) i)Briefly discuss the disadvantages of the constant growth dividend model as a valuation model. (4 marks)

ii) The dividend per share of Mavazi Limited as at 31 December 2000 was Sh.2.50. The company"s financial analyst has predicted that dividends would grow at 20% for five years after which growth would fall to a constant rate of 7%. The analyst has also projected a required rate of return of return of 10% for the equity market. Mavazi"s shares have a similar risk to the typical equity market.

Required

The intrinsic value of shares of Mavazi Ltd as at 31 December 2000. (8 marks)

(Total: 20 marks)

QUESTION TWO

a) The management of Furaha Packers Ltd. Is planning to carry out two activities at the same time to:

i) determine the best credit policy for its customers
ii) find out the optimal level of ordering orange juice from its suppliers

The following data have been collected to assist in making the decisions:

1. Annual requirements of orange juice are 2,100,000 litres.
2. The carrying cost of the juice is Sh.8 per litre per year.
3. The cost of placing an order is She.8 per litre per year.
4. The required rate of return for this type of investment is 18% after tax.

5. Debtors currently are running at Sh.60 million and have an average collection period of 40 days.
6. Sales are expected to increase by 20% if the credit terms are relaxed and to result in an average collection period of 60 days.
7. 60% of sales are on credit.
8. the gross margin on sales is 30% and is to be maintained in future.

Required

i) Use the inventory (Baumol) model to determine the economic order quantity and the ordering and holding costs at these levels per annum. (8 marks)

ii) Determine if the company should switch to the new credit policy. (4 marks)

b) The Appolo Collection Company Ltd. Employs agents who collect hire purchase instalments and other outstanding amounts on a door to door basis from Monday to Friday. The agents bank their collections at the close of business everyday from Monday to Thursday. At the close of business on Friday the week"s bankings are withdrawn and, together with Friday"s collections, are remitted to the head office. The takings are evenly spread daily and weekly. The budget for the next year shows that total collections will amount to Sh.26 million. The bankings are used to reduce an overdraft whose interest rate is 19%.

The collection manager has suggested that instead of banking collections, they be remitted daily to the head office by the collectors.

Required

Determine the increase in annual interest if the collection manager"s suggestion was adopted.
(8 marks)
(Total: 20 marks)

QUESTION THREE

Rafiki Hardware Tools Company Limited sells plumbing fixtures on terms of 2/10 net 30. Its financial statements for the last three years are as follows:

	1998 Sh'000'	1999 Sh'000'	2000 Sh'000'
Cash	30,000	20,000	5,000
Accounts receivable	200,000	260,000	290,000
Inventory	400,000	480,000	600,000
Net fixed assets	800,000	800,000	800,000
	1,430,000	1,560,000	1,695,000
Accounts payable	230,000	300,000	380,000
Accruals	200,000	210,000	225,000
Bank loan, short term	100,000	100,000	140,000
Long term debt	300,000	300,000	300,000
Common stock	100,000	100,000	100,000
Retained earnings	500,000	550,000	550,000
	1,430,000	1,560,000	1,695,000
Additional information:			
Sales	4,000,000	4,300,000	3,800,000
Cost of goods sold	3,200,000	3,600,000	3,300,000
Net profit	300,000	200,000	100,000

Required

a) For each of the three years, calculate the following ratios:
Acid test ratio, Average collection period, Inventory turnover, Total debt/equity, Net profit margin and Return on assets. (12 marks)

b) From the ratios calculated above, comment on the liquidity, profitability and gearing positions of the company. (8 marks)

(Total: 20 marks)

QUESTION FOUR

a) Explain fully the effect of the use of debt capital on the weighted average cost of capital of a company. (6 marks)

b) Millennium Investments Ltd. wishes to raise funds amounting to Sh.10 million to fiancé a project in the following manner:

Sh.6 million from debt; and
Sh.4 million from floating new ordinary shares.

The present capital structure of the company is made up as follows:

1. 600,000 fully paid ordinary shares of Sh.10 each.
2. Retained earnings of Sh.4 million.
3. 200,000, 10% preference shares of Sh.20 each.
4. 40,000 6% long term debentures of Sh.150 each.

The current market value of the company"s ordinary shares is Sh.60 per share. The expected ordinary share dividends in a year"s time is Sh.2.40 per share. The average growth rate in both dividends and earnings has been 10% over the past ten years and this growth rate is expected to be maintained in the foreseeable future.

The company"s long term debentures currently change hands for Sh.100 each. The debentures will mature in 100 years. The preference shares were issued four years ago and still change hands at face value.

Required

i) Compute the component cost of:
- Ordinary share capital; (2 marks)
- Debt capital; (2 marks)
- Preference share capital (2 marks)

ii) Compute the company"s current weighted average cost of capital. (5 marks)

iii) Compute the company"s marginal cost of capital if it raised the additional Sh.10 million as envisaged. (5 marks)

(Assume a tax rate of 30%). **(Total: 20 marks)**

SECTION II

QUESTION FIVE

a) The CMA (Capital Market Authority) has put in place several tax incentives to encourage investments in capital markets.
Highlight some of the tax incentives by the Capital Markets Authority. (4 marks)

b) Explain the benefits that are enjoyed by investors because of the existence of organized security exchanges. (8 marks)

c) Briefly describe the benefits of the Central Depository System (CDS) to the following stakeholders:
i) Government; (2 marks)
ii) Capital Markets Authority and Nairobi Stock Exchange. (2 marks)
iii) Investors. (2 marks)

(Total: 18 marks)

QUESTION SIX

a) What are financial intermediaries and what role do they play in the economy? (9 marks)

b) Foreign Direct Investment (FDI) plays a crucial role in revamping less developed economies,

Required

Write brief notes on the obstacles to the flow of FDI into the Kenyan economy. (9 marks)

(Total: 18 marks)

KENYA ACCOUNTANTS AND SECRETARIES NATIONAL EXAMINATIONS BOARD

CPA PART II and CPA PART III

December 2001

Answer ALL questions in SECTION I and ONE question in SECTION II. Marks allocated to each question are shown at the end of the question. Show all your workings.

SECTION I

QUESTION ONE

a) Highlight four advantages and disadvantages to a company of being listed on a stock exchange. (8 marks)

b) In relation to the stock exchange:

i) Explain the role of the following members:

- floor brokers (2 marks)
- market makers (2 marks)
- underwriters (2 marks)

ii) Explain the meaning of the following terms:

- bull and bear markets (2 marks)
- bid-ask spread (2 marks)
- short selling (2 marks)

(Total: 20 marks)

QUESTION TWO

Multi-Link, a trading company, currently has negligible cash holdings but expects to make a series of cash payments totaling Sh.150 million over the forthcoming year. These payments will become due at a steady rate. Two alternative ways have been suggested of meeting these obligations.

Alternative I

The company can make periodic sales from existing holdings of short-term securities. The average percentage rate of return on these securities is 12 over the forthcoming year. Whenever Multi-Link Ltd sells the securities. It will incur a transaction fee of Sh.15,000. The proceeds from the sale of the securities are placed on short-term deposit at 7% per annum interest until needed.

Alternative II

The company can arrange for a secured loan amounting to Sh.150 million for one year at an interest rate of 18% per annum based on the initial balance of the loan. The lender also imposes a flat arrangement fee of Sh.50,000 which would be met out of existing balances. The sum borrowed could be placed in a notice deposit at 9% per annum and drawn down at no cost as and when required. Multi-Link Ltd."s treasurer believes that cash balances will be run down at an even rate throughout the year.

Required

a) i)Explain the weaknesses of the Baumol model in the management of cash. (3 marks)

ii) Advise Multi-Link Ltd. as to the better alternative for managing its cash. (7 marks)

b) Lynx Services Ltd., a debt collection agency, has estimated that the standard deviation of its daily net cash flow is Sh.22,750. The company pays Sh.120 in transaction cost every time it transfers funds into and out of the money market. The rate of interest in the money market is 9.46%. The company uses the Miller-Orr Model to set its target cash balance. The minimum cash balance has been set at Sh.87,500.

Required

i) The company"s target cash balance. (3 marks)
ii) The lower and upper cash limit. (2 marks)
iii) Lynx Services Ltd."s decision rules. (5 marks)

QUSTION THREE

Magharibi Cane Millers Ltd. is a company engaged in the pressing and processing of sugar can juice into refined sugar. For some time, the company has been considering the replacement of its three existing machines.

The production manager has learnt from a professional newsletter on sugar of the availability of a news and larger machine whose capacity is such that it can produce the same level of output per annum currently produced by the three machines. Furthermore, the new machine would cut down on he wastage of juice during processing. If the old machines are not replaced, an extraordinary overhaul would be immediately necessary in order to maintain them in operational condition. This overhaul would at present cost Sh.5,000,000 in total.

The following additional information is available:

1. The old machines were purchased 5 years ago and are being depreciated over 15 years on a straight line basis, with an estimated final scrap value of Sh.600,000 each. The current second hand market value of each of the machines is Sh.1,000,000.

2. The annual operating costs for each of the existing machines are;

	Shs.	Shs.
Raw sugar cane		60,000,000
Labour (one operator)		1,350,000
Variable expense		925,000
Maintenance (excluding overhaul expenditure)		2,000,000
Fixed expenses		
Depreciation	75,000	-
Fixed factory overhead absorbed	2,700,000	2,775,000

3. The new machine has an estimated life of ten years and its initial cost will comprise:

	Shs.
Purchase price (scrap value in 10 years, Sh.4,500,000)	87,000,000
Freight and installation	13,000,000
	100,000,000

4. The estimated annual operating costs, if all the current output is processed on the new machine are:

	Shs.	Shs.
Raw sugar cane		162,000,000
Labour		3,900,000
Variable expense		2,275,000
Fixed expenses:		
Depreciation	9,550,000	
Fixed factory overhead absorbed	7,800,000	17,350,000
Maintenance		4,500,000

5. The company"s cost of capital is 10%.

6. For a project to be implemented, it must pass both the profitability test, as indicated by its internal rate of return and also satisfy a financial viability test, in that it must pay back for itself within a maximum period of five years.

Required

a) i)Net present values of the proposed replacement decision using discount rates of 10% and 20%. (8 marks)

ii) The estimated internal rate of return (IRR) of the replacement decision using the values determined in (i) above. (4 marks)

iii) Advise management on the proposal based on your answer in (i) above. (2 marks)

b) Decision as to whether the project meets the financial viability test. (4 marks)

c) Comment on any other qualitative considerations that could influence this decision. NB: Ignore taxation. (2 marks)

(Total: 20 marks)

QUESTION FOUR

Three years ago, Mrs Rehema Waziri was retrenched from the Civil Service. She invested substantially all her terminal benefits in the shares of ABC Ltd. a company quoted on the stock exchange. The dividend payments from this investment makes up a significant portion of Mrs. Waziri"s income. She was alarmed when ABC Ltd, dropped its year 2001 dividend to Sh.1.25 per share from Sh.1.75 per share which it had paid in the previous two years.

Mrs Waziri has approached you for advice and you have gathered the information given below regarding the financial condition of ABC Ltd. and the finance sector as a whole.

	1999 Sh'000'	2000 Sh'000'	2001 Sh'000'
Cash	15,250	14,400	8,000
Accounts receivable	80,320	87,800	134,400
Inventory	98,600	158,800	254,000
Total current assets	194,170	261,000	396,400
Land and buildings	25,230	27,600	25,000
Machinery	33,800	36,400	30,600
Other fixed assets	14,920	18,200	16,400
Total assets	268,120	343,200	468,400
Accounts and notes payable	34,220	73,760	135,848
Accruals	15,700	34,000	67,000
Total current liabilities	49,920	107,760	202,848
Long term debt	60,850	60,858	81,720
Ordinary share capital	115,000	115,000	115,000
Retained earnings.	42,350	59,582	68,832
	268,120	343,200	468,400

ABC Ltd. Income Statement for the year ending 31 October

	1999 Sh'000'	2000 Sh'000'	2001 Sh'000'
Sales (all on credit)	827,000	858,000	890,000
Cost of sales	(661,600)	(710,000)	(712,000)
Gross profit	165,400	148,000	178,000
General administrative and selling expenses	(63,600)	(47,264)	(51,200)
Other operating expenses	(25,400)	(31,800)	(38,200)
Earnings before interest and tax (EBIT)	76,400	68,936	88,600
Interest expense	(12,800)	(26,800)	(63,600)
Net income before taxes	63,600	42,136	25,000
Taxes	(25,400)	(16,854)	(10,000)
Net income	38,200	25,282	15,009
Number of shares issued	4,600,000	4,600,000	4,600,000
Per share data:			
Earnings per share (EPS)	Sh.8.30	Sh.5.50	Sh.3.26
Dividend per share	Sh.1.75	Sh.1.75	Sh.1.25
Market price (average)	Sh.48.90	Sh.25.50	Sh.13.25

	Industry Financial ratios **(2001)**
Quick ratio	1.0
Current ratio	2.7
Inventory turnover	7 times
Average collection period	32 days
Fixed asset turnover	13.0 times
Total assets turnover	2.6 times
Net income to net worth	18%
Net profit margin on sales	3.5%
Price-Earnings (P/E) ratio	6 times
Debt/Equity ratio	50%

Notes

1. Industry ratios have been roughly constant for the past four years.
2. Inventory turnover, total assets turnover and fixed assets turnover are based on the year-end balance sheet figures.

Required

a) The financial ratios for ABC Ltd. for the past three years corresponding to industry ratios given above. (10 marks)

b) Arrange the ratios calculated in (a) above in columnar form and summarise the strengths and weaknesses revealed by these ratios based on:

i) Trends in the firm"s ratios. (6 marks)
ii) Comparison with industry averages. (6 marks)

(The summary should focus on the liquidity, profitability and turnover ratios).

(Total: 20 marks)

SECTION II

QUESTION FIVE

a) List and explain five factors that should be taken into account by a businessman in making the choice between financing by short-term and long-term sources. (10 marks)

b) Enumerate four advantages of convertible bonds from the point of view of the borrower. (8 marks)

(Total:18 marks)

QUESTION SIX

In a company, an agency problem may exist between management and shareholders on one hand and the debt holders (creditors and lenders) on the other because management and shareholders, who own and control the company have the incentive to enter into transactions that may transfer wealth from debt holders to shareholders. Hence the need for agreements by debt holders is lending contracts.

Required

a) State and explain any four actions or transactions by management and shareholders that could be harmful to the interests of debt holders (sources of conflict).
(8 marks)

b) Write short notes on any four restrictive covenants that debt holders may use to protect their wealth from management and shareholder raids. (10 marks)

(Total: 18 marks)

KENYA ACCOUNTANTS AND SECRETARIES NATIONAL EXAMINATIONS BOARD

CPA PART II and CPA PART III

May 2002

Answer ALL questions in SECTION I and ONE question in SECTION II. Marks allocated to each question are shown at the end of the question. Show ALL your workings.

SECTION I

QUESTION ONE

a) Discuss the drawbacks of using the following approaches in estimating a security"s value.

i) Book value; (3 marks)
ii) Replacement value; (3 marks)
iii) Substitution value; (3 marks)
iv) Intrinsic value. (3 marks)

b) Ngomongo Holdings Limited has investment interests in three companies. Kirinyaga Video Limited (KVL). Kilgoris Hauliers Limited (KHL) and Turkana Fisheries Limited (TFL). The following financial data relate to these companies:

1. As at 31 December 2001, the financial statements of two of the companies revealed the following information:

Company	Price of share **Sh.**	**Earnings per share Sh.**	**Dividend per share Sh.**
Kirinyaga Video Ltd (KVL)	160	8	8
Kilgoris Hauliers Ltd. (KHL)	270	18	9

2. Earnings and dividend information for Turkana Fisheries Ltd. (TFL) for the past five years is given below:

Year ended 31 December	**1997 Sh.**	**1998 Sh.**	**1999 Sh.**	**2000 Sh.**	**2001 Sh.**
Earnings per share	5.0	6.0	7.0	10.0	12.0
Dividend per share	3.0	3.0	3.5	5.0	5.5

The estimated return on equity before tax required by investors in Turkana Fisheries Ltd."s shares is 20%.

Required

i) For Kirinyaga Video Ltd. (KVL) and Kilgoris Hauliers Ltd. (KHL), determine and compare:

- Dividend yields (2 marks)
- Price/Earnings ratios (2 marks)
- Dividend covers (2 marks)

ii) Using the dividends growth model, determine the market value of 1,000 shares held in Turkana Fisheries Ltd. (TFL) as at 31 December 2001.

(4 marks)

(Total: 22 marks)

QUESTION TWO

Clean Wash Ltd. manufactures and markets automatic washing machines. Among the many hundreds of components which it purchases each year from external suppliers for assembling into the finished articles are drive belts, of which it uses 400,000 units per annum. It is considering converting its purchasing delivery and stock control of this item to a Just-In-Time (JIT) system. This will raise the number of orders placed but lower the administrative and other costs of placing and receiving orders. If successful, this will provide the model for switching most of its inwards supplies into this system.

Details of current and proposed ordering and carrying costs are given below:

	Current	**Proposed**
Ordering cost per order	**Sh.10,000**	**Sh.2,500**
Purchase cost per item	**Sh.25**	**Sh.25**
Inventory holding cost (as a percentage of the purchase cost)	**20%**	**20%**

To implement new arrangements will require a „one-off" reorganization costs estimated at Sh.140,000 which will be treated as a revenue item for tax purposes. The rate of corporation tax is 32.5% and Clean Wash Ltd. can obtain finance at an effective cost of 18%. The life span of the new system is 8 years.

Required

a) i)The economic order quantity with current and proposed arrangements.

(5 marks)

ii) Net Present Value (NPV) of the new arrangement. Is the new arrangement worthwhile? (10 marks)

b) Briefly explain the nature and objectives of JIT purchasing agreements concluded between components users and suppliers. (5 marks)

(Total: 20 marks)

QUESTION THREE

The management of Afro Quatro Ltd. want to establish the amount of external financial needs for the next two years. The balance sheet of the firm as at 31 December 2001 is as follows:

	Sh.'000'
Net fixed assets	124,800
Stock	34,400
Debtors	28,800
Cash	7,200
Total assets	199,200
Financed by:	
Ordinary share capital	84,000
Retained earnings	35,200
12% long term debt	20,000
Trade creditors	36,000
Accrued expenses	24,000
	199,200

For the year ended 31 December 2001, sales amounted to Sh.240,000,000. The firm projects that the sales will increase by 15% in year 2002 and 20% in year 2003.

The after tax profit on sales has been 11% but the management is pessimistic about future operating costs and intends to use an after-tax profit on sales rate of 8% per annum.

The firm intends to maintain its dividend pay out ratio of 80%. Assets are expected to vary directly with sales while trade creditors and accrued expenses from the spontaneous sources of financing. Any external financing will be effected through the use of commercial paper.

Required

a) Determine the amount of external financial requirements for the next two years. (7 marks)

b) i) A proforma balance sheet as at 31 December 2003. (10 marks)

ii) State the fundamental assumption made in your computations in (a) and b (i) above. (1 mark)

(Total: 18 marks)

QUESTION FOUR

P. Muli was recently appointed to the post of investment manager of Masada Ltd. a quoted company. The company has raised Sh.8,000,000 through a rights issue.

P. Muli has the task of evaluating two mutually exclusive projects with unequal economic lives. Project X has 7 years and Project Y has 4 years of economic life. Both projects are expected to hav zero salvage value. Their expected cash flows are as follows:

Project	**X**	**Y**
Year	**Cash flows (Sh.)**	**Cash flows (Sh.)**
1	2,000,000	4,000,000
2	2,200,000	3,000,000
3	2,080,000	4,800,000
4	2,240,000	800,000
5	2,760,000	-
6	3,200,000	-
7	3,600,000	-

The amount raised would be used to finance either of the projects. The company expects to pay a dividend per share of Sh.6.50 in one year"s time. The current market price per share is Sh.50. Masada Ltd. expects the future earnings to grow by 7% per annum due to the undertaking of either of the projects. Masada Ltd. has no debt capital in its capital structure.

Required

a) The cost of equity of the firm. (3 marks)

b) The net present value of each project. (6 marks)

c) The Internal Rate of Return (IRR) of the projects. (Rediscount cash flows at 24% for Project X and 25% for Project Y). (6 marks)

d) Briefly comment on your results in (b) and (c) above. (2 marks)

e) Identify and explain the circumstances under which the Net Present Value (NPV) and the Internal Rate of Return (IRR) methods could rank mutually exclusive projects in a conflicting way. (5 marks)

(Total: 22 marks)

SECTION II

QUESTION FIVE

a) What is meant by the term "capital flight"? (5 marks)

b) Why have African economies been characterized by much capital flight in the past? (8 marks)

c) What is the impact of massive capital flight on the value of the domestic currency? (5 marks)

(Total: 18 marks)

QUESTION SIX

a) Discuss the main factors which a company should consider when determining the appropriate mix of long-term and short-term debt in its capital structure. (6 marks)

b) Malingi Leisure Industries is already highly geared by industry standards, but wishes to raise external capital to finance the development of a new beach resort.

Outline the arguments for and against a rights issue by Malindi Leisure Industries. (6 marks)

c) Examine the relative merits of leasing versus hire purchase as a means of acquiring capital assets. (6 marks)

(Total: 20 marks)

REVISION QUESTIONS

QUESTION ONE

The following are the financial statements of Richardo Ltd. for the year ended 31 March 1995:

Balance Sheet as at 31 March 1995

	Shs.		Shs.
Cash	480,000	Trade creditors	860,000
Debtors	640,000	Notes Payable 9(%)	840,000
Stock	2,080,000	Long term debt (10%)	1,600,000
Net equipment	1,600,000	Shareholders Equity	1,500,000
	4,800,000		4,800,000

	Shs.	Shs.
Sales		6,000,000
Less: Cost of sales		3,600,000
Gross profit		2,400,000
Deduct: Selling expenses	600,000	
Administrative and general expenses	1,120,000	
Interest charges	235,600	1,955,600
Profit before taxation		444,400
Taxation		177,760
Net profit		266,640

All sales are net and on credit.

The following industry ratios are also provided to you.

	Industry Averages
Current ratio	2.5 times
Acid test ratio	1.1 times
Stock turnover ratio	2.4 times
Total assets turnover ratio	1.4 times
Times interest earned ratio	3.5 times
Net profit margin	4.0 percent
Return on investment	5.6 percent
Total assets to shareholders equity	3.0 times
Return on shareholders equity	16.8 percent

Required

a) Calculate the ratios shown above for Richardo Ltd. and present them in columnar form along the industry averages. (14 marks)

b) Comment upon the following about Richardo Ltd. in relation to the industry averages:

i) Liquidity position. (3 marks)

ii) Financial risk (3 marks)

iii) Overall performance (3 marks)

(Total: 23 marks)

QUESTION TWO

a) Deni Limited wishes to raise funds for expansion using corporate bonds.

i) What is a corporate bond? (2 marks)
ii) State and explain two advantages in the use of corporate bonds. (2 marks)
iii) What costs are associated with the issue of corporate bonds? (4 marks)

b) Deni Limited has issued Sh.10,000, 16% bonds redeemable at par on 1 June 2009. The bonds are dated 1 May 1999. The bonds may however be redeemed at par on 1 June 2001. Upon issue the bonds will be traded on the Stock Exchange. The market rate of interest on 1 May was 14%.

Required

i) The issue price of the bond. (4 marks)
ii) The expected market price of the bond as at 1 June 2001. The market rate of interest is expected to be 10%. (4 marks)
iii) Should Deni Limited redeem the bond on 1 June 2001? Why? (4 marks)

(Total: 20 marks)

QUESTION THREE

RITE Ltd. maintains an average monthly balance of Sh.320,000 in accounts receivable throughout the year. The company is in need of additional working capital and is considering two alternative methods of raising it.

METHOD 1 Factoring accounts receivable
METHOD 2 A commercial bank loan secured by accounts receivable.

The company"s bankers have agreed to lend the firm 80% of its average accounts receivable at an interest of 30% per annum. The amount will be made available in a series of 30 day advances. The advances would be discounted and a 6% compensating balance will be required.

The factor is willing to establish a factoring arrangement on a continuing basis. It charges 2% for servicing the accounts and 15% per annum on any advances taken. Both charges are made on discount basis. In addition, the factor requires a 5% reserve to cover returned items. RITE Ltd. sells its merchandise on terms of net 30.

Required

a) Calculate the amount of advances RITE Ltd. can expect to have under each alternative. (14 marks)

b) Calculate the effective rate of interest for each financing alternative. (4 marks)

c) Which alternative would you recommend and why? (2 marks)

(Total: 20 marks)

QUESTION FOUR

Capital markets in Kenya have expanded over the last few years. This expansion is due to:

i) The initiatives of Capital Markets Authority
ii) The introduction of new financial instruments
iii) The appreciation of the role and functions of the capital markets by Kenyans.

Required

a) What are the roles of Capital Markets Authority? (6 marks)

b) Explain the meaning of the term "Financial Instrument" (4 marks)

c) Describe the following investments which are available in the Kenyan Market today:

i) Treasury Bill; (4 marks)
ii) Commercial Paper (4 marks)

(Total: 18 marks)

QUESTION FIVE

Mr. Hesabu Kazi is considering giving up his paid employment and going into business on his own account. He is considering buying a quarry pit with a "life" of about 35 years. To purchase this business, he would have to pay £2,375,000 now. Mr. Kazi wishes to retire in 20 years" time. He predicts that the net cash operating receipts from this business will be £625,000 per annum for the first 15 years and £ 500,000 per annum for the last 5 years. He thinks that the business could be sold at the end of the 20 year period for £750,000. Additionally, he estimates that certain capital replacements and improvements would be necessary and this should amount to £50,000 per annum for the first 5 years; £75,000 per annum for the next 5 years, £100,000 per annum for the next 7 years and nothing for the last three years. This expenditure would be incurred at the start.

Mr. Kazi has excluded any compensation to himself from the above data. If he should purchase the business, however, he would have to leave his present job in which he earns £250,000 a year. To finance the purchase of this business, he would have to realize his present savings which are invested to yield a return of 10 per cent before tax, and have a comparable risk factor.

Required

a) Advise Mr. Kazi as to whether or not it is advisable to purchase the business in the light of the information given.
Ignore Income Tax. (16 marks)

b) Is there any additional information which you would have liked to have available to you before giving advise to Mr. Kazi? (4 marks)

(Total: 20 Marks)

SUGGESTED SOLUTIONS – DECEMBER 2001

QUESTION ONE

a) Debenture with floating interest rate:

- A debenture whose interest rate is variable and pegged to charges in interest rate on Treasury bills e.g a debenture/bond may have a 3% premium above interest rate on Treasury bill such that:
  - If interest rate on treasury bill is 7%, interest rate on the bond is 7% + 3% = 10%.
  - If interest rate on Treasury bill rises to 8.5%, the interest rate on the bond rises to 8.5% + 3% = 11.5%.
- Such a bond is advantageous when market interest rates are volatile.
- If market interest rate falls, the borrower pays lower interest charges and when it rises, the lender receives more interest income.
- Since the coupon rate is matched to market interest rate, the intrinsic value of the bond is usually stable and easy to determine.

b) Zero coupon bonds

- The bonds do not pay periodic interest charges hence the words zero coupon bond. They are issued at a discount and mature at par.
- Therefore, interest is accumulated and accounted for in the redemption value of the bond.
- The lender is not locked into low fixed interest rate while the borrower does not have fixed financial obligations of paying fixed interest charges.
- The liquidity of the borrower is not affected until the redemption date.

Drawbacks of dividend growth model

- It is only applicable if the cost of equity, Ke is greater than growth rate, in dividends i.e.

$$P_0 = \frac{d_0(1+g)}{K_e - g}$$

If g>ke, then the model would collapse.

- It is based on historical information where d_0 is the past dividend per share, and „g" is based on historical stream of dividends which may not represent the future.

- It assume a constant stream of dividends in future, growth rate and cost of equity all of which are not achievable in real world.

ii) Compute the expected DPS at end of each period and discount at 10% rate
Expected DPS = $d_0(1+g)_n$

End of year	**Expected DPS**	**PVIF$_{10\%,n}$**	P.V
1	$2.50(1.2)_1 = 3.00$	0.909	2.73
2	$2.50(1.2)_2 = 3.60$	0.826	2.97
3	$2.50(1.2)_3 = 4.32$	0.751	3.24
4	$2.50(1.2)_4 = 5.18$	0.683	3.54
5	$2.50(1.2)_5 = 6.22$	0.621	3.86
6-∞	$\frac{d_0(1+g)}{K_e - g}$		

$= \frac{6.22(1.07)}{0.10-0.07} = 221.85 \times 0.621 = 137.77$

= Intrinsic value = Total present value = 154.11

QUESTION TWO

a) i) Economic order quantity (EOQ) = $\sqrt{\frac{2DC_0}{Ch}}$

Where: D = annual demand in units = 2,100,000 litres
C_0 = order cost per order = Sh.1,400
Ch = holding cost per unit p.a. = Sh.8

$Q=EOQ= \sqrt{\frac{2x2,100,000x1,400}{8}} = 2,710.88$ litres

Ordering costs = $\frac{D}{Q} C_0 = \frac{2,100,000}{27,110.88} x1,400 =$ Sh.108,443.5

Holding costs = ½QCh = ½ x 27,110.88 x 8 = Sh.108,443.5

ii) Evaluation of credit policy:

- Current debtors = 60M
- Current credit period = 40 days
- Therefore current credit sales p.a. = $\frac{360days}{40days} x60M = 540M$
- New credit sales p.a. = $540Mx \frac{120\%}{100\%} = 648M$
- New debtors= $\frac{60}{360} x648M = 108M$

Cost benefit analysis:

New gross profits	=	30% x 648M	=	194.4	
Current Gross profits	=	30% x 540M	=	162.0	32.4M

New debtors	108M	
Current debtors	60M	
Increase/tied up capital	48M	
Forgone profits = ROI x tied up capital = 18% x 48M		(8.64)
Net benefit		23.76

Switch to the new credit policy.

b) Expected collection p.a. = Sh.26,000,000

Expected collection per week = $\frac{\text{Sh.26,000,000}}{\text{52 wks}}$ = 500,000

Collection per day = $\frac{500{,}000}{5\text{days}}$ = 100,000

Interest rate per day = $\frac{19\%}{365}$ = 0.052% per day

The current policy is to collect cash and deposit it on daily basis. The new policy is to collect cash, remit to headquarter on Friday. If money is not deposited on Monday, interest will be foregone for 4 days. If money is not deposited on Wednesday, interest is forgone for 2 days.

Day	**Amount not banked**	**Number of days delayed**	**Interest charges**	
Monday	100,000	4	100,000 x 0.052% x 4 =	208
Tuesday	100,000	3	100,000 x 0.052% x 3 =	156
Wednesday	100,000	2	100,000 x 0.052% x 2 =	104
Thursday	100,000	1	100,000 x 0.052% x 1 =	52
			Total interest per week	520

Annual cost = 520 x 52 = 27,040

QUESTION THREE

Ratio	Formulae	1998	1999	2000
Acid test ratio =	Current assets – stock / Current liabilities	30 + 200 / 230 + 200 + 100 = 0.43	20+ 260 / 300+ 210+100 = 0.46	5+290 / 380+ 225+140 = 0.40
Average debtors collection period	Debtorsx 360 / Credit sales p.a.	200 x 360 = 18 days / 4,000	260 x 360 = 21.8 days / 4,300	290 x 27.5 days / 3,800
Inventory Turnover	Cost of sales / Average stock	3,200 = 8 times / 400	3,600 = 7.50 times / 480	3,300 = 5.5 times / 600
Total debt/equity	Total debt / Equity	830= 1.38 times / 100 + 500	910= 1.40 times / 100 + 550	1045 = 1.61 times / 100 + 550
Net profit margin	Net profits x 100 / Total Assets	300 x 100 = 7.5% / 4000	200 x 100 = 4.6% / 4300	100 x 100 = 2.6% / 3800
ROTA	Net Profits x 100 / Total assets	300 x 100 = 21% / 1430	200 x 100 = 13% / 1560	100 x 100 = 5.9% / 1,695

NB: Total debt = Current liabilities + long term debt.

b) Liquidity Position

- This is shown by acid test ratio
- The ratio has fluctuated over the years between 0.40 and 0.46
- This could be due to high level of inventories and increasing debtors
- The firm"s ability to meet short term financial obligations is declining over time.

Profitability position

- This is shown by net profit margin and ROTA ratios
- Both ratios are declining over time
- This is particularly due to high operating and cost of sales expenses which are increasing over time leading to low net profits. Additional sales of the firm are declining.
- The firm needs to control its costs of sales and operating expenses.

Gearing position

- This is shown by total debt/equity ratio
- This ratio is increasing over time due to increasing accounts payable and accruals while equity remains fairly constant.
- The firm is thus relying more on short term financing (aggressive financing approach) increasing financial risk and possibility of bankruptcy.

QUESTION FOUR

a) At initial stages of debt capital the WACC will be declining upto a point where the WACC will be minimal. This is because.

i) debt capital provides tax shield to the firm and after tax cost of debt is low.
ii) The cost of debt is naturally low because it is contractually fixed and certain.

Beyond the optimal gearing level, WACC will start increasing as cost of debt increases due to high financial risk.

b) i)Cost of equity

$$Ke = \frac{d_0 (1+ g)}{P_0} + g$$

$d_0(1+g)$ = Sh.2.40

P_0 = Sh.60

g = 10%

$$Ke = \frac{2.40}{60} + 0.10 = 0.14 = 14\%$$

Cost of debt capital (Kd)

Since the debenture has 100 years maturity period then Kd = yield to maturity = redemption.

$$Kd = \frac{Int(1- T)+ (m - vd)\frac{1}{n}}{(m + vd)½}$$

m = Maturity/par value = Sh.150
vd = market value = Sh.100
n = number of years to maturity = 100
Int = Interest = 6% x Sh.150 = Sh.9 p.a.
T = Tax rate = 30%

$$Kd = \frac{9(1-0.3) + (150-100)\frac{1}{100}}{(150+100)½} = \frac{6.8}{125} x100 = 5.441\%$$

Cost of preference share capital Kp

Kp = Coupon rate = 10% since MPS = par value

ii) WACC or overall cost of capital Ko

M.V of equity = 600,000 shares x Sh.60 MPS	36
M.V of debt = 40,000 debentures x Sh.100	4
M.V of preference shares = 200,000 shares x Sh.20	4
	44

Ke = 14% Kd = 5.44% Kp = 10%

$$Ko = WACC = 14\% \left(\frac{36}{44}\right) + 5.44\% \left(\frac{4}{44}\right) + 10\% \left(\frac{4}{44}\right) = 12.86\%$$

The Sh.10M will be raised as follows:

Sh.6 M from debt
Sh.4 M from shares.

Since there are no floatation costs involved then:

Marginal cost of debt = 5.44%
Marginal cost of ordinary share capital = 14%

$$\text{Therefore marginal cost of capital} = 14\% \left(\frac{4}{10}\right) + 5.55\% \left(\frac{6}{10}\right) = 8.86\%$$

QUESTION FIVE

a) The tax incentives to encourage investments in capital markets are:

- Capital gains are tax exempt
- New quoted firm with effect from 1st January 2003 will have a lower corporate tax rate of 25% p.a. for the first 5 years of quotation.
- Venture capital firms enjoy a ten year tax holiday
- The withholding tax on dividends is only 5% which is final tax
- Floatation costs of newly quoted firms and tax allowable expenses
- The transfer of securities is exempted from stamp duty and VAT
- Income of collective investment scheme is tax free.

b) The benefits that enjoyed by investors due to existence of organized security exchanges e.g Nairobi Stock Market are:

- The firms are able to issue new shares and raise capital easily.
- The exchange is a vehicle of mobilizing savings in the economy.
- Since investors can buy new shares, this enable them to diversify their investments and reduce risk
- It is a means through which foreign direct investment (FOI) can flow into the economy.
- Investors are able to know the price of their securities as determined by demand and supply forces in the stock exchange.

- Since investors cannot buy or sell shares themselves, they interact with stockbrokers and get investment advice.

c) The benefits of central depository system (CDS) to the:

i) Government:

- There will be greater mobilization of savings in the economy
- It is a convenient way for FOI
- It reduces the cost of capital since transaction costs are significantly reduced.

ii) Capital Market Authority and NSE

- Increased share turnover
- Increased stock market liquidity
- Improved transparency of stock market
- Better service delivery

iii) Investors

- Reduced share transfer costs
- Faster and more efficient settlement of deals
- Investments become more liquid
- Reduced share certificate is required (dematerialisation)

QUESTION SIX

a) Financial Intermediaries

- These are financial institutions which link/intermediate between the surplus economic units (savers) and deficit economic units (borrowers)
- They can be either money market intermediaries e.g. commercial banks or capital markets intermediaries e.g stock market
- They play the following roles:

  - They link the lenders and borrowers
  - They collect savings themselves and channel them to viable investments
  - They create liquidity of securities
  - They parcel up small savings from small scale savers and lend in form of bid loans.

b) The obstacles to FDI are:

- Lack of adequate legal framework and legislations
- Inadequate human resource capital
- Political instability and general insecurity
- Corruption and cases of bad governance.
- Inadequate tax and economic incentives
- Underdeveloped capital markets and financial system.
- High cost of capital due to relatively high interest rates and inflation rates.
- Unstable exchange rates which increases the cost of managing foreign exchange risk.

DECEMBER 2001

QUESTION ONE

a) A company is said to be quoted when its shares are traded on an organized stock exchange. The advantages of being quoted are:

- It is easier to obtain additional capital by issuing new shares.
- The price of a share can be easily determined through demand and supply forces.
- The ownership of the firm is spread among many shareholders creating stability of share prices.
- It becomes very easy to transfer ownership from shares. This is because no authority is required from the firm"s shareholders.
- The buying and selling activities creates liquidity and marketability of the share.
- The acquisition of other firm or mergers with other firms becomes easy especially when there is a share for share exchange.
- Greater prominent status and better credit standing is given to quoted firms thus creating goodwill for the firm.

The disadvantages of being quoted are:

- It involves high floatation costs
- The firm has to adhere to stringent stock exchange rules and regulations
- Stringent disclosure requirement thus public scrutiny and lack of privacy

- Extra administrative burdens on the management due to the need to comply with so many regulatory authorities.
- There is dilution in ownership and control from wide holding of shares.

b) i)Floor brokers

- These are agents of investors who buy and sell securities on behalf of the investors.
- They earn a commission for services rendered to the client.
- They deal with market makers who usually have the shares which stock brokers want to buy for client.

ii) Market makers

- Stock market dealers holding securities of selected firms. They thus "make a market" for the firm"s shares.
- They are members of the stock market and will usually announce the shares they have and the price at which they are willing to sell them.
- They buy shares of new firms and sell them to stockbrokers thus making profits which is the difference between buying price and selling price.

iii) Underwriter

- This is a financial intermediary (usually an investment banker) who performs the following functions.
  Buying the shares not subscribed for by the public thus performs an insurance function to ensure that the firm is able to raise targeted profits from issue of all the shares.
  Might help in pricing of new security issues.

c) i)Bear and Bull market

- Bull market is a stock market characterized by increase in share prices whereby marginal increase in share prices is higher than marginal declines in share prices.
- A Bear market is characterized by general decline in share prices. The marginal share price declines are higher than marginal share price increases.

ii) Bid – as spread
This is the difference between the offer and the buying price of a share.

iii) Short selling

- This is selling a share when prices are high believing that they will decline (bear market) thus be bought again at a lower price.

- The seller usually "borrow" such a share, deliver it to the client and on purchase of the share at a lower price, it is returned to the "lender"

QUESTION TWO

a) i)Weaknesses of Baumol Model

The weaknesses of the Baumol (EOQ) model are inherent in its assumptions which are:

- The annual cash requirement is known and constant
- Transaction/Transfer or conversion costs are known ad fixed.
- The firm has a steady cash inflow and outflow.
- The interest rate on short term marketable securities remain constant over cash planning period.

Baumol model is a deterministic model which assumes certainty of parameters of the models.

ii) Alternative 1

Determine the total cost of holding cash under this alternative.

* Lost interest income = 12% x 150m x ½ = 9,000,000

* Optimal cash balance, $C = \sqrt{\frac{2TC}{i}}$

T = 150m
C = Sh.15,000
i = 12% = 0.12

$$C = \sqrt{\frac{2x150,00,000x15,000}{0.12}} = 6,123,724$$

* Numbers of conversion p.a. = $\frac{T}{C} = \frac{150,000,000}{6,123,724} = 24.5 = 25$

* Total conversion cost = $\frac{T}{C} b$

= 25 x 15,000 = 375,000

* Interest income on short term deposit

= ½Cid
= ½ x 6,123,724 x 7% = 214,330

Where id = interest rate on short term deposits.

Summary

Lost income	9,000,000
Conversion cost	375,000
Less interest income	(214,330)
Net cost	9,160,670

Alternative II

Interest paid 150m x 18%	27,000,000
Less interest received = 150m x 9%	(13,500,000)
Add arrangement fees	50,000
Total cost	13,550,000

Recommendation: The policy of selling short term securities results in lower cost thus preferable.

b) Lynx Services

i) The firm should use the Miller-Orr model which is a stochastic model.

Optimal cash balance, $Z = \sqrt[3]{\frac{3b\sigma^2}{4i}} + L$

b = Conversion costs = Sh.120
σ^2 = Daily variance of cash flows = $(Sh.22,750)^2$
L = Lower cash balance = Sh.87,500
i = Daily interest rate on short term marketable securities = $\frac{0.09165}{360 days}$ = 0.0002546

$Z = \sqrt[3]{\frac{3 \times 120 \times (22,750)^2}{4 \times 0.0002546}} + 87,500$

= 56,770 + 87,500 = Sh.144,270

ii) Upper Limit H = 3Z–2L

= (3 x 144,270) – (2 x 87,500) = 257,810

iii) Lower limit: This is given in the question as Sh.87,500

iii) Decision rate:

* If the cash balance increases from optional balance Z to upper limit H, buy short term marketable securities worth H – Z i.e 257,810 – 144,270 = 113,540. The returns to balance Z.

* If the cash balance declines to lower limit L, sell short term marketable securities equal to Z – L i.e. Sh.144,270 – 87,500 = 56,770.

* The firm should hold a cash balance with a spread between H and L (H – L) i.e. 257,810 – 87,500 = 170,310.

QUESTION THREE

a) i) - Determine the increamental initial capital at year 0

	Sh"000"
Purchase cost – new machine	100,000
Less proceeds from sale of 3 machines i.e. Sh.1,000,000 x 3 machines	(3,000)
Less savings in overhaul cost (in p.v)	(5,000)
Increamental initial capital	92,000

- Increamental salvage value at end of year 10

sale of new machine.	4,500
Less sale of 3 machines @ Sh.600,000 – foregone	(1,800)
	2,700

- Derivation of annual cash flows.

The cash flows are equal to annual savings in operating costs. Since tax is ignored, increamental depreciation (non-cash items) is irrelevant since there is no tax shield. The annual cash savings are as follows:

	New machine	3 existing machines	Net savings
Raw sugar cane	162,000	60,000 x 3 = 180,000	18,000
Labour	3,900	1,359 x 3 = 4,050	150
Variable expenses	2,275	925 x 3 = 2,775	500
Maintenance	4,500	2,000 x 3 = 6,000	1,500
Fixed factory overheads		112,700 x 3 = 8,100	300
EBT = EAT Cash flows p.a.			20,450

NPV analysis @10% and 20%

Year	C. Flows	PV@10%,n	P.V	PVF@20%,n	P.V
0	(92,000)	1.000	(92,000)	1.000	(92,000)
1 – 10 p.a	20,450	6.145	125,665.25	4.192	85,726.4
10	2,700	0.386	1,042.45	0.162	437.4
NPV		(+ve)	34,707.45	(-ve)	(5,836.2)

ii) I.R.R

N.P.V @ 10% = 34,707.45
N.P.V @ 20% = -5,836.2

$$\text{I.R.R.} = 10\% + \frac{34{,}707.45}{5{,}836.2}(20\% - 10\%)$$

$$= 10\% + \frac{34{,}707.45}{34{,}707.45 - 40{,}543.65}(10\%) = \underline{\underline{18.56\%}}$$

iii) The firm should replace the existing 3 machines with a new one since the NPV is positive and IRR > 10% cost of capital.

b) Financial viability test

This means that the payback should not exceed 5 years in case of annuities,

$$\text{payback period} = \frac{\text{Initial capital}}{\text{Annual c/Flows}}$$

$$= \frac{92{,}000}{20{,}450}$$

$$= 4.5 \text{ years}$$

The project thus meets financial viability test

c) Other qualitative factors

The need for training of staff to use the new machine
Possibility of breackdown of the single machine which would halt the operations with 3 existing machines, if one breaks down, production would still continue with the other two.
Technological changes affecting the new machine
Effects on staff morale due to laying off of some employees.
Availability of spare parts for the new machine
Riskness of the replacement decisions.

QUESTION FOUR

Ratio	Formula	1999	2000	2001	Industrial norms
	C.A – Stock / C.L	194,170- 98600 / 49920 = 1,914	261000– 158800 / 107.760 = 0.948	396400- 254000 / 208,848 = 0.682	= 1.0
	C.A / C.L	194,170 / 49,920 = 3,890	261,000 / 107,760 = 2.422	396,400 / 208,848 = 1.898 = 2	= 2.7
	Cost of Sales / Av. Stock (closing stock)	661,600 / 98,600 = 6.710 times	710,000 / 158,800 = 4.471times	712,000 / 254,000 = 2.803 times	= 7.0 times
	365 x closing debtors / Credit sales	365 x 80320 / 827,000 = 35.45 = 35 days	365 x 87,800 / 858,000 = 37.35 = 37 days	365 x 134,400 / 890,000 = 37.35 = 55 days	= 32 days
	Sales___ / Fixed Assets	827,000 / 73,950 = 11.183 times	858,000 / 82,200 = 10.438 times	890,000 / 72 = 12.36 times	= 13.0 times
	Sales___ / Total Assets	827,000 / 268,120 = 3.08 times	858,000 / 343.2 = 2.5 times	890,000 / 468.4 = 1.90 times	= 2.6 times
	Net income x 100 / Equity	38,200x100 / 115,000+42350 = 24.3%	25,282x100 / 115000+59582 = 14.5%	15,000x100 / 115000+68832 = 8.2%	= 18%
	Net income x 100 / Sales	38,200x100 / 827000 = 4.6%	25,282x100 / 858000 = 2.95%	15,000x100 / 890,000 = 1.69%	= 3.5%
	MPS / EPS	48.90 / 8.30 = 5.89 = 5.9 times	25.50 / 5.50 = 4.6 times	13.25 / 3.26 = 4.06 times	= 6 times
	Fixed Charge Capital / Equity	60,858 / x100 / 115000+42350 =38.67%	60,858 / x100 / 115000+59582 =34.86%	81,720 / x100 / 115000+68820 =44.45%	= 50%

b) i)Trend in the firm rates analysis

- This will indicate the performance of the firm over time i.e years 1999, 2000 & 2001. This will be summarised as follows:

Liquidation Position

- This is shown by quick and current ratio
- The ratios are declining over time
- This is due to poor working capital management policy as shown by high increase in current liability of the years.
- The firm"s ability to meet its short term financial obligation is declining over time

Profitability position

- This is shown by return on equity and net profit margin
- Both ratios are declining over time
- This could be attributed in decline in net income due to persistent increase in operating expenses but in particular the interest expenses.
- The firm"s ability to control financing expenses is declining over time. This is shown by high interest charges caused by high gearing especially in year 2001.

Turnover Ratio Position

- This is shown by inventory turnover, fixed assets, and total assets, turnover plus average collection period.
- Apart from fixed assets turnover which slightly increased in year 2001 all the others are declining over time.
- This is due to low turnover of stock as shown by increase in industry and the general increase in total assets.
- This implies that, the firm is not efficient utilising the assets to generate sales revenue e.g increase in average collection period reduces inventory turnover thus insignificant increase in sales. Additional, the firm may be having idle assets which may be fully depreciated or may be it is not operating at full capacity.

ii) Comparison with industry average:

- This will involve industrial analysis which is carried out only at one point in time. Therefore the performance of ABC Ltd. is compared with industrial norms on average for year 2001 only.

Liquidity position

- Shown by quick and current ratios
- For year 2001 both ratios are lower than industrial norms
- This is due to poor policy of capital management
- The firm"s ability to meet its short term financial obligation is on average lower than that of other firms in the market/industry.

Profitability position

- Shown by R.O.E and net profit margin ratio
- For year 2001, both ratios are lower than industrial norms
- This is due to low net income specifically due to high interest charges in year 2001.
- The firm to control its gearing level and financing/interest expenses is lower than that of other firms in industry.

Turnover ratio position

- This is shown by inventory, fixed assets and total assets turnover ratio plus average debtors collection period.
- For year 2001 all the ratios are worse than industrial norms.
- This could be due to high level of total assets or where the assets are under-utilised.
- On average, the efficiency with which the firm utilised its assets to generate sales revenue for year 2001 was for much lower than industrial norms.

QUESTION FIVE

a) In deciding whether to go for short-term or long term finance, the following factors should be considered:

Cost of finance e.g a decline in interest rates are expected to decline, use short term funding now and replace it with long term funds in future.

Availability of security/collateral e.g it is easier to raise short term funds where no collateral may be requested by the lender.

Matching e.g. a 10 year asset would be fixed with a 10 year loan while a six month cash shortfall would be financed with six month bank overdraft.

Availability of capital – e.g lenders may be willing to lend long term depending on their expectations on inflation rate.

Liquidity of the firm e.g if the liquidity ratio is low, it may not be possible to obtain further finance without causing concern to creditors.

Flexibility – short term loans are more flexible because the firm can react to changes in interest rate unlike long term loans where the firm is locked in long term fixed interest payment commitments.

Restrictive terms are conditions e.g long term loans may have restrictive covenants making them less attracting.

QUESTION SIX

a) The actions by management and shareholders which could be harmful to the bondholders (sources of conflict) are:

Disposal of assets used as a collateral/security for the loan term bondholders.

Asset substitution i.e. substitution agreed low risk project with a high risk project which subject the bondholders to more risk.

Borrowing additional debt capital – such debt may take a priority charge on asset on liquidation of the firm.

Payment of high dividends thus all projects with positive NPV would not be taken and value of the firm is not maximized.

Under investment – a borrowing firm may have the incentive to reject projects with a positive NPV if the benefit from accepting the project will substantially accrue to bondholders.

b) The restrictive bond covenants includes:

Restriction on investment – the bondholders direct the type of project to be undertaken to avoid cases of asset substitution.

Restriction on disposal of assets unless with explicit permission from lenders.

Restrictions on mergers and acquisitions which may affect the value of bonds.

Covenants restricting issue of new debentures to raise additional debt.

Restrictions specifying the liquidity level working capital to be maintained.

Restrictions on the payment of dividends

Bond requirements e.g purchase of insurance by managers and specification of accounting technique used by the borrower.

Covenants to modify pattern of pay off to bondholder e.g sinking funds creation, convert the bonds/debentures into ordinary shares, retire/call the bond before maturity date etc.

MAY 2002

QUESTION ONE

a) i) The book value of a security is the shilling amount recorded on the firm"s balance sheet. The book value is a poor indication of the value of a stock for at least three reasons:-

It is historical in nature rather than future orientated
Comparability of reported book values between companies is a significant problem
Book values reflect solely the original shilling amount investment made by a security holder.

ii) Replacement value represents a security"s claim to the current reproduction value of the firm"s assets Replacement Value has two major drawbacks.

Replacement value is difficult to determine
A stock bears an economic value to the extent that future cash flows are expected. These cash flows might be totally unrelated to the asset"s replacement value.

iii) Substitution value reflects the value of a security when compared with that of substitute securities. There are 2 problems with using substitution value.

It neglects any economies/diseconomies of scale that might arise when products A and B are produced together as opposed to separately
Practical problem of identifying comparable firms.

iv) Intrinsic value relates value to future payouts from the security; the price is determined by the estimated payoffs rather than resale value.

b) i) Dividend Yield:
This provides a method of comparison between the performance of dividend companies.

Kirinyaga Video Limited $\frac{8}{160}$ = 5%

Kilgoris Hauliers Limited $\frac{9}{270}$ = 3.33%

Although KHL pays a higher dividend than KVL the later is preferred since the dividend yield is higher.

Price/Earnings ratio:
This measures the absolute level of earnings to the market price of shares.

Kirinyaga Video Limited $160/8$ = 20 yrs/times

Kilgoris Hauliers Limited **Error! Not a valid embedded object.** = 15 yrs/times

KVL is more attractive than KHL.

Dividend Cover

Provides an indication of the probable ability of the company to sustain the current level of dividend payments. A very low level of dividend cover suggests that dividends may be more volatile. In general the higher the retentions the more likely there is to be a good level of capital appreciation.

Kirinyaga Video Limited  = 1 time

Kilgoris Hauliers Limited  = 2 times

KHL has more potential for capital growth than KVL since the later pays almost all its earnings in the form of dividends and retains little for investment in income generating projects.

Dividend in 1997 x $(1 + g)_4$ = Dividend in 2001

$$(1 + g)_4 = 5.5/3$$

$$g = 16.36\%$$

$$MV = 5.5\left(\frac{1+ 0.1636}{0.2 - 0.1636}\right)$$

MV = 175.81865

Market value of 1000 shares is Sh.175,819.

QUESTION TWO

a) i) $EOQ = \sqrt{\frac{2x\ demandx\ order\ ingcos\ t}{Car\ r\ yingcos\ tx\ unitpur\ hac\ sec\ ost}}$

Before re-organisation = $\sqrt{\frac{2x400,000x10,000}{0.2x25}}$

EOQ = 40,000 units

After re-organisation = $\sqrt{\frac{2x400,000x2,500}{0.2x25}}$

EOQ = 20,000 units

ii) Implementation of the new system will affect both total ordering costs per annum and stockholding cost under the existing system these costs are as follows:

$\frac{400,000}{40,000}$ = 10

Ordering cost = Number of orders per year
Cost per order = Sh.10,000 per order
Costs per annum = 10,000 x 10 = 100,000

Carrying cost = Average stock is 20,000
Cost is 20,000 x 25 x 20% = 100,000
Total costs = 100,000 + 100,000 = 200,000

Under the proposed scheme the costs would become:-

Ordering costs: Number of orders $= \frac{400,000}{20,000}$ = 20

Cost per order is Sh.2,500

Therefore total ordering cost = 20 x 2,500 = Sh.50,000

Carrying costs - Average stock is 10,000 units. Thus total carrying cost is:
- 10,000 x 25 x 20% = Sh.50,000
Total costs = Sh.100,000

The annual tax saving is therefore (200,000 – 100,000) = 100,000
This will give rise to an after tax cash flow of [100,000 x (1-0.325)] = Sh.67,500

Discounting the cash flows at		
18% Year 0[140,000 x (1 – 0.325)]	=	94,500
x 1.0 Year 1 – 8 (67,500 x 4.078)	=	275,265
NPV or re-organisation	=	180,765

b) JIT represents a complete management philosophy and is more than just a collection of techniques. It aims to manufacture to order for each customer and to eliminate idle resources in all areas of the company. It is a technique which enables management to order and buy what it requires at that particular point in time.

In terms of purchasing, a JIT system aims to ensure that components are delivered just immediately prior to the need to use then in the production process. It therefore requires a close relationship to be built up between customer and supplier, the later being required to deliver quality assured components to match production schedules. Suppliers in turn should benefit it from fair long- term sales as the purchaser reduces its number of sources. This should allow the supplier to achieve scale economies and improved production planning. The customer should achieve a reduction in ordering costs and in stock levels and associated carrying costs.

QUESTION THREE

a) Item directly varying with sales = % of 2001 sales

Net fixed assets	=	$\frac{124,800}{240,000} \times 100$	=	52%
Stock	=	$\frac{38,400}{240,000} \times 100$	=	16%
Debtors	=	$\frac{28800}{240,000} \times 100$	=	12%
Cash	=	$\frac{7,200}{240,000} \times 100$	=	3%
				83%

Trade Creditor	=	$\frac{36,000}{24,000} \times 100$	=	15%
Accrued expenses	=	$\frac{24,000}{240,000} \times 100$	=	10%
				25%

Year 2002 sales	=	240,000,000 x 1.15	=	276,000,000
Year 2003 sales	=	27,600,000 x 1.20	=	331.200.000

Total increase in sales=	331,200,000 – 240,000,000	=	(22,800,000)
Increase in total assets = 83% x 91,200,000		=	75,696,000
Less: increase in current liabilities = 25% x 91,200,000		=	(22,800,000)
Less: retained earnings:			
Year 2002 Net Profit = 8% x 276,000,000 =		22,080,000	
Less: 80% dividends	=	(17,664,000)	(4,416,000)
Retained earnings:			
Year 2003 Net Profit = 8% x 331,200,000	=	26,496,000	
Less: 80% dividends	=	(21,196,800)	
Retained earnings			(5,299,200)
External financial needs (commercial paper)			43,180,000

b) i) **Pro-forma Balance Sheet as at 31 December 2003**

Net fixed assets	52% x 331,200,000	172,224,000
Stock	16% x 331,200,000	52,992,000
Debtors	12% x 331,200,000	39,744,000
Cash	3% x 331,200,000	9,936,000
		274,896,000
Financed by:		
Ordinary share capital		84,000,000
Retained earnings 35,200,000 + 4,416,000 + 5,299,200		44,915,200
12% long term debt		20,000,000
Trade Creditors 15% x 331,200,000		49,680,000
Accrued expenses 10% x 331,200,000		33,120,000
Commercial paper		43,180,800
		274,896,000

ii) No change in value of money (inflation) during the forecasting period.

QUESTION FOUR

a) Cost of equity (ke) $= \frac{d_0(1+g)}{P_0} + g$

$= \frac{6.50}{50} + 0.07$

$= \underline{20\%}$

b) **Project X**

Year	Cash flows	**$PVIF_{20\%,n}$**	P.V
1	2,000,000	0.833	1,666,000
2	2,200,000	0.694	1,526,800
3	2,080,000	0.579	1,204,320
4	2,240,000	0.482	1,079,680
5	2,760,000	0.402	1,109,520
6	3,200,000	0.335	1,072,000
7	3,600,000	0.279	1,004,400
	Total P.V		8,662,720
	Less initial capital		(8,000,000)
	N.P.V. (+ve)		662,720

Project Y

Year	Cash flows	**$PVIF_{20\%,n}$**	P.V
1	4,000,000	0.833	3,332,000
2	3,200,000	0.694	2,082,000
3	4,800,000	0.579	2,779,200
4	800,000	0.482	385,600
			8,578,800
			(8,000,000)
			578,000

c) **Project X**

N.P.V @ 24% = -300,276

N.P.V @ 20% = 662,720

I.R.R. $= 20\% + \frac{662,720}{662,720 + 296,120}(24\% - 20\%)$

$= 20\% + 2.8 = \underline{22.8\%}$

Project Y

N.P.V @ 25% = -94,400

N.P.V @ 20% = 578,000

I.R.R $= 20\% + \left(\frac{578,000}{578,000+94,400}\right)(25\% - 20\%)$

20+ 4.3 = 24.3%

d) -N.P.V method ranks project X as number one
-I.R.R method ranks project Y as number one
-There is conflict in ranking of mutually exclusive projects.

e) Conflict between N.P.V and I.R.R
- In case of difference in economic lives of projects
- In case of difference in size of the projects
- In case of difference in timing of cash flow
- In case of non-conventional cash flows.

QUESTION FIVE

a) "Capital flight" is the smuggling of funds from a country through usually unofficial channels overseas. It is commonly found in economies that have foreign exchange control laws (regulations) where investments move from home country seeking higher returns in other countries.

b) -Political instability – Many members of the ruling elite unsure about their fate should their regimes be overthrown – thus transfer wealth to more stable countries.
- Lower rate of return in home country
- Higher taxation of companies and individuals
- Artificially high local currency value encourages capital flight as those involved realize much higher values of hard currencies on exchange.
- Poor infrastructure
- Due to high levels of corruption among the ruling elite – they want to keep their wealth out of reach of their local fellow citizens who would raise questions on how wealth was created.
- High inflation rate
- Legal framework e.g fiscal policies.

c) Massive capital flight forces a country to devalue local currency as they often have to run to the multilateral finance institutions like World Bank and IMF for salvation of the very constantly worsening Balance of Payment problem.

QUESTION SIX

a) i) **Matching**
The traditional view is that fixed assets should be financed by long term sources of finance and current assets by a mixture of long-term and short term sources.

ii) **Cost** – The company may find it easier to raise short-term finance with low security than long-term finance.

iii) **Security** – The company may find it easier to raise short-term finance with low security than long-term finance.

Risk – In opting for short-term debt, the company faces the risk that it may not be able to renegotiate the loan on such good terms. Long-term loans are thus less risky.

Flexibility – Short-term debt is more flexible since it allows the firm to react to interest rate charges and avoid being locked into an expensive long-term fixed rule commitment when rates are falling.

b) **Benefits of a rights issue to Malindi Leisure Industries:**

The company is highly geared as rights issue would reduce the level of gearing and reduce in the level of financial risk..
If the issue is successful it will not significantly change the voting structure.
If underwriters are raised then the amount of finance that will be raised in known and guaranteed.
If the market is high, Malindi Leisure Industries should be able to achieve a rights issue at a relatively low cost since less shares will be issued. (Lower floatation costs) Less administrative procedures e.g no need for prospectus.

Drawbacks of rights issue

The issue will need to be priced at a discount to the current share price in order to make it attractive to investors. Thus will result in a diluter in earnings and a fall in share price.
If the issue is not successful, a significant number of shares may be taken by underwriters thus changing the voting structure.
Administration and underwriting costs are high.
Shareholders may be unable or unwilling to increase their investment in Malindi Leisure Industries.

c) **Advantages of leasing**

No risk of obsolescence in the lessee
Leasing does not require a down payment to be made at the start of the contract unlike hire purchase. (No heavy initial capital outlay required).
Lease finance can be arranged relatively, cheaply, quickly and easily.
Leasing premiums are allowable against tax
Operating leases are off-balance sheet financing

Advantages of hire purchase

Unlike leasing, hire purchase allows the user of the asset to obtain ownership at the end of the agreement period.
The interest element of the payments is allowable against tax.
Tax shield on depreciation of asset
Cash inflows on salvage value at the end of economic life of asset.

REVISION ANSWERS

QUESTION ONE

a) Ratios

Current ratio = Current Assets / Current liability	$\frac{480+640+2,080}{840+860} = 1.88$ times	2.5 times
Acid test ratio = (Current Assets – stock) / Current Liabilities	$\frac{480+640}{840+860} = 0.66$ times	1.1 times
Stock turnover ratio = Cost of sales / Average stock	$\frac{3,600,000}{2,080,000} = 1.73$ times	2.4 times
Total assets turnover = Sales / Total assets	$\frac{6,000,000}{4,800,000} = 1.25$ times	1.4 times
Times interest earned ratio: = Operating profit (EBIT) / Interest expenses	$\frac{444,400+235,600}{235,600} = 2.89$ times	3.5 times
Net profit margin = Net profit (EAT) / Sales	$\frac{266,640}{6,000,000} = 4.44\%$	4%
Return on investment = EAT / Total investment	$\frac{266,640}{4,800,000} = 5.56\%$	5.6%
Total assets to shareholders equity: = Total assets / S/H equity	$\frac{4,800,000}{1,500,000} = 3.2$ times	3.0 times
Return on shareholders equity: ROSE/Return networth = EAT and preference div. / Equity	$\frac{266,640}{1,500,000} = 17.75\%$	16.8%

b) Comment on:

i) **Liquidity**

- This is shown by current and acid test ratios
- Both ratios are lower than the industrial average
- This could be attributed to poor working capital management policy, defective credit policy and increase in current liabilities
- The firm"s ability to meet its short term maturing financial obligations is lower than the industrial average

ii) **Financial risks**

- This is shown by the gearing ratios
- For Richardo Limited TIER (Times interest earned ratio) is the indicator of financial risk
- The ratio is lower than the industrial average
- This is due to high interest charges due to use of fixed charged capital

Example: The total capital of the firm consists of long term debt and equity both totalling to 3.1M.

$$\text{Gearing ratio} = \frac{\text{Fixed Charge capital}}{\text{Total capital}}$$

$$= \frac{1{,}600{,}000}{3{,}100{,}000} \times 100 = 51.6\%$$

The firm is highly gearing hence the high financial risk and high interest charges.

iii) **Overall performance**

- This is indicated by profitability ratios
- In case of Richardo Ltd. this is shown by net profit margin, ROI and return on equity ratios
- The ratios are higher than the industrial average except return on investment which is equal to industrial average
- The firm is generating adequate returns from its investments more than other firms in the market.

Note

The firm has lower liquidity ratio hence high liquidity risks. The firm is highly geared hence high financial risks. The firm is therefore using borrowed capital in order to gear up or increase its profitability or returns which are higher than the industrial average. It is therefore a high risk, high return firm.

QUESTION TWO

a) i) **Corporate bond**

A long term debt instrument issued by a company to raise long term capital. It pays period interest charges and promises the payment of principal at maturity.

ii) **Advantages of corporate bond**

a) Interest charges are tax deductible and hence provide interest tax shield benefit.
b) It enables a firm to raise long term capital without the lenders gaining ownership of the firm.
c) The lenders do not share in extra profits once they have a fixed rate of return.

iii) Costs associated with issue of corporate bonds. These are called floatation costs and are incurred in floatation of any new securities.

- Commission/fee paid to underwriters e.g merchant banks or investment bankers.
- Costs of preparing bond certificate and prospectus
- Professional fee paid to financial advisors, lawyers, auditors and accountants
- Commission paid to sponsoring stock brokers
- Cost of registering the bond with CMA
- Advertising and other floatation costs.

b) i)Issue price = P.V of expected interest income + P.V of redemption value

Redemption value 10,000 payable only at end of 10^{th} year
Coupon rate 16%

Interest p.a. = $10{,}000 \times \frac{16}{100}$ = 1,600/= p.a. for 10 years

Discounting rate = market rate of time of issue = 14%

P V of period interest (1,600 x P.V.A.$F_{14\%,10}$)	
1,600 x 5,216	8,345.6
P.V of redemption value 10,000 x P.V.A.$F_{14\%,10}$	
10,000 x 0.270	2,700.0
Market value of a bond	11,045.6

ii) Value of the bond will be based on the remaining maturity period. Number of years elapsed = 2 years
Number of years remaining (10-2) = 8 years
Discounting rate = market rate – 1^{st} June 2001 = 10%

Periodic interest income = 1,600 p.a. for 8 years
Redemption value = 10,000

PV of period interest	=	1,600 x P.V.A.F$_{14\%,8}$	
	=	1,600 x 5.335	8,536
PV of redemption value	=	10,000 x P.V.A.F$_{14\%,8}$	
	=	10,000 x 0.467	4,670
Market value of a bond			13,206

iii) YES! This is because the firm can borrow new debt capital at a lower interest rate. If the market interest rate is lower than the coupon rate, the firm can always redeem the debt capital after carrying out a bond refunding decision analysis i.e repay the current debt capital with high interest capital and borrow a new debt capital at a lower interest rate.

QUESTION THREE

a) **METHOD 1: Factoring**

Amount of debtors = Shs.320,000
Credit period = monthly = 30 days

Step 1: Compute amount of service fee

Service fee = $\frac{2}{100} \times \text{debtor s} = \frac{2}{100} \times 320{,}000$ = Sh.6,400 within credit period

Service fee with credit period = Sh.6,400

Service fee within one year = $\left(\frac{360}{60} \times 6{,}400\right)$ = Sh.76,800

Step 2: Compute amount of reserves

= $\frac{5}{100} \times 320{,}000$ = 16,000

Step 3: Compute annual interest charges

Interest charges p.a. = I.R (Debtors – Reserve)

$\frac{15}{100} \times (320{,}000 - 16{,}000)$ = Shs.45,600

Interest charges p.a. = 45,600

Interest charges within a period = $\frac{30}{360} \times 45{,}600$ = Shs.3,800

Amount to advance = Debtors – Reserves – Service fee – Interest charges

within a period within a period

METHOD 2: Pledging

A line of credits

A bank may enter into a formal understanding or arrangement with the borrower to the effect that the borrower will not take the lumpsum of loan.

- The bank will create a loan account for the borrower where the amount of loan required will be deposited.

- This arrangement is called a line of credit.

  The borrower will be withdrawing the amount of cash he/she requires from the loan account as long as he does not exceed the amount agreed with the bank and deposited with the loan account.

  Every time the borrower withdraws a certain amount from the loan account, he is said to be taking down a certain amount of money on the line of credit. E.g. if the loan account has Sh.1,000,000 and the borrower withdraws Shs.100,000 he shall have taken down Shs.100,000 on the line of credit.

  Often times the borrower may be required to maintain a minimum balance in the loan account over and above what was borrowed.

  This amount should not be withdrawn but the bank will charge interest on it. This minimum balance is called compensating balance.

  Amount of loan to advance = 80% of debtors = $\frac{80}{100}$ x320,000 = 256,000

  Less 6% compensating balance = $\left(\frac{6}{100} \text{ x256,000}\right)$ = (15,360)

  Less interest charges p.a. | 256,000x $\left(\frac{30}{100}\right)$ = 76,800

  Interest charges within 30 days = $\frac{30}{360}$ x76,800 = (6,400)

  Amount to advance 234,240

  Note: Interest charges will be based on total amount including compensating balance i.e. Shs.256,000.

b) Factoring = Effective annual interest rate

= Annual interest charges + Annual service fees x 100% Amount advanced

$$= \left(\frac{45{,}600 + 76{,}800}{293{,}800}\right) \times 100\% = \underline{\underline{41.7\%}}$$

Pledging = Effective annual interest rate = $\frac{\text{Annual interest charges}}{\text{Amount Advanced}} \times 100\%$

$$= \left(\frac{76{,}800}{234{,}200}\right) \times 100\% = \underline{\underline{32.8\%}}$$

c) Pledging because it is cheaper.

QUESTION FOUR

Role of Capital Market Authority

i) Issue rules, regulations and procedures of trading in capital markets.

ii) Licensing of brokers and requiring them to have a minimum base capital for operations.

iii) Fair trading in stock exchange to prevent cases of insider trading and ensure prices are determined by demand and supply mechanism on information supplied in the market.

iv) It operates compensation fund to indemnify an investor incase a broker fails to fulfill his contractual financial obligations.

v) Implementing government policies to ensure development of capital market infrastructure in Kenya.

vi) Credit awareness for investment in long term securities.

Financial Instrument

Financial instruments are financial securities held by investors (lenders) in form of financial assets. They indicate the amount which is owed to the lender by the borrower. They can be long term and short term financial securities.
Short term securities include: Commercial paper, Treasury bills, Notes payable, promissory notes, bills of exchange etc.
Long term financial instruments will include debentures, mortgages, ordinary shares, preference shares etc.

i) Treasury bill

- It is a short term financial instrument used by the Government to raise money from the market.
- It is issued at a discount and matures at par value.
- It has a fixed interest rate during its maturity period
- It is a riskless investment and its interest rate is called risk free rate.
- Its maturity period can be 91 days or 182 days.

ii) Commercial paper

- A short term financial instrument used by financially strong and sound firms in the market.
- Used to raise short term capital
- They are unsecured (they just require a guarantor)
- They are issued at a discount and mature at par value
- Their maturity period varies from 30, 60, 90, 120, 150, 270 days etc.
- They are cheaper source of short term finance compared to bank overdrafts and short term bank loans.

QUESTION FIVE

a) Go into business

Initial capital		(2,375,000)
P.V of year 1 – 15 Cash flow		
= 625,000 x $PVAF_{10\%,15}$		
= 625,000 x 7.606	=	4,753,750
PV of year 16 – 20 cash flow		
= 500,000($PVAF_{10\%,20}$ - $PVAF_{10\%,15}$)		
= 500,000(8.514 – 7.606)	=	454,000
PV of salvage value		
= 750,000 x $PVAF_{10\%,20}$		
= 750,000 x 0.149	=	111,750
PV of costs (annuity due)		
Years 1 – 5 = 50,000 x $PVAF_{10\%,5}(1+r)$		
= 50,000 x 3.797 x 1.1		(208,505)
Year 6 – 10 = 75,000($PVAF_{10\%,10}$ - $PVAF_{10\%,5}$)(1 + r)		
= 75,000(6.145 – 3.791)1.1		(194,205)
Year 11 – 17 = 100,000($PVAF_{10\%,17}$ - $PVAF_{10\%,10}$)(1+r)		
= 100,000(8.022 – 6.145)1.1		(206,470)
TOTAL PV		2,335,320
Remain in job.		
P V = 250,000 x $PVAF_{10\%,20}$ = 250,000 x 8.514	=	2,128,500
Decision: Go into business cost of higher PV of		206,820

b) Other factors:

- Possibility of salary increament
- Tax effects
- Inclusion of salary to self in the analysis
- Accuracy of cash flow estimates
- Attitude to risk
- Cost of capital – will it be constant for 20 years
- Salvage value – how accurate is it.

MOCK EXAMINATION

To be carried under examination condition and sent to the Distance Learning Administrator for making by the University.

Time Allowed: 3 Hours **Attempt All Questions**

QUESTION ONE

a) Describe the characteristics of long term capital investment decisions. (4 marks)

b) BCB company is a manufacturer of bricks and concrete blocks. The company is considering replacing part of the current manual labour force by purchasing a small tractor with a forklift for use in loading bricks and concrete blocks. The purchase price would be Sh.570,000. The tractor will have an economic life of 5 years but would require a Sh.20,000 overhaul at the end of 3 years. After 5 years the tractor could be sold for Sh.110,000.

The company estimates it will cost Sh.250,000 per year to operate the tractor. It will, however, save Sh.130,000 annually on labour cost. Because of increase in handling efficiency, losses caused by breakages will be cut by Sh.220,000 per year. Sales will also go up by Sh.450,000. The new sales level is expected to be maintained throughout the tractor"s life. Assume the company"s gross margin ratio is 40%, corporate tax rate 30%, and cost of capital 16%. Also assume straight-line method of depreciation.

Required

Determine the NPV of the project and state whether the tractor should be purchased. (13 marks)

c) Identify 3 circumstances under which NPV and IRR will give conflicting results for mutually exclusive projects. (3 marks)

QUESTION TWO

United Steel has just been reorganized to produce industrial machinery. The company is in the process of establishing a financial policy and the following two alternative plans have been suggested.

Plan X: 2,000,000 ordinary shares of Sh.10 each.
Sh. 12,000,000 long term loan at 18% per annum.

Plan Y: 2,500,000 ordinary shares at Sh.10 each
Sh.7,000,000 long term loan at 18% per annum.

The founders of United Steel have projected the following Earnings Before Interest and Taxes (EBIT).

Economic Phase	Probability	EBIT Sh."000"
A	0.2	16,000
B	0.6	28,000
C	0.2	40,000

The company"s marginal tax rate is 40%.

Required

a) i)Calculate the expected Earnings Per Share (EPS) for each financial plan. (10 marks)

ii) Which financial plan should be accepted? Why? (2 marks)

b) Calculate the level of EBIT where the EPS are equal for the two plans. (8 marks)

QUESTION THREE

a) What economic advantages are created by the existence of:

i) Primary markets (3 marks)
ii) Secondary markets (3 marks)
iii) Portfolio management firms. (4 marks)

b) Explain how the Capital Markets Authority can ensure:

i) Faster growth and development of the Nairobi Stock Exchange or Stock Exchange in your country. (6 marks)

ii) Development of other stock exchanges in Kenya or in your country. (4 marks)

(Total: 20 marks)

QUESTION FOUR

a) What is meant by:

i) Cost of equity capital? (2 marks)
ii) Cost of preferred shares? (2 marks)

b) Pesa Limited wishes to take advantage of the new commercial paper market now popular in Kenya. It wishes to issue two debenture papers. Both bear coupons of 14 percent, and the effective yield required on each is 20 percent. Paper A has a maturity of 10 years and paper B a maturity of 20 years. Both will be paying interest annually and Shs.100,000 at maturity.

Required

i) What is the price of each paper? (6 marks)

ii) If the effective yield on each paper rises to 24 percent, what is the price of each paper? (4 marks)

iii) Explain why the price of one paper falls more than the price of the other when the effective yield rises. (2 marks)

c) Explain the concept of weighted average cost of capital. (4 marks)

(Total: 20 marks)

QUESTION FIVE

a) Write explanatory notes on:

i) Flat yield and redemption yield; (4 marks)
ii) Price earnings ration; (2 marks)
iii) Significance of dividend cover. (3 marks)

b) The nominal value of a company"s share is Sh.45 and the dividend for the year is 10% on nominal value of the share. The current market price of the share is Sh.90. The share"s earnings yield is 15%.

Required

A computation of:

i)	Dividend cover;	(3 marks)
ii)	Earnings; and	(4 marks)
iii)	Price/Earnings ratio	(4 marks)

(Total: 20 marks)

END OF MOCK EXAMINATION

NOW SEND YOUR ANSWERS TO THE DISTANCE LEARNING CENTRE FOR MARKING